Tri-Service Safety Conference

18 September 2003, Ramstein AB

The Zoldak Group, Inc.

FMA

Facility Management Assistant

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Zoldak Group

ZGi is a proven cohesive team of experienced environmental, safety, health, and information technology personnel focused on the practice of risk management via:

- Developing tools for risk recognition, evaluation and management
- Re-engineering
- Providing conditions assessment
- Supporting issues management
- Providing risk management training
- Policy / Program development & validation

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Key Personnel

John Zoldak
President, Senior Analyst, safety, IH, IT, epidemiology, lab sciences
SAIC Engineer, GRC Mgr. Medical & Env. Applications, SRA Senior Scientist

Joyce Zoldak, Esq.
Vice President, General Counsel
Associate General Counsel DOJ/BOP

Gary Vest
Senior Advisor, strategic planning, ESOH
Principal Ast. Deputy Under Secretary of Defense, Deputy Assistant Secretary of the Air Force

Bob Parli
Director of Professional Integration, SOH
30+ years of safety experience. Chem Demil, USAF Deputy for Safety, Chief of Safety Wright-Patterson AFB

Dr. Doran Christensen
Senior Occupational Physician
27 yrs experience. Navy/Air Force, ergonomics, aviation medicine, program development and management, medical director DOE's Fernald Environmental Management Project

Clyde Morell
Senior Safety Prof. / quality analyst, program development, conditions assessment
30+ yrs of safety exp. SME Boiler/Pressure Vessel, ASME/ANSI, API, 10 CFR, DOE, DOD, ISO 9000, 1401, Baldridge

Phil Lowe, PhD, PE
Senior environmental engineer, radiation, program development, training
DOE SES, American Society Mechanical Eng., Cert. Auditor, Cert. Env Manager, Cert. Lead Paint MD

Walter Hunter
Senior Programmer / Analyst
FMA development, support manager, mobile applications development

Eileen Anderson
Accounting, contracts

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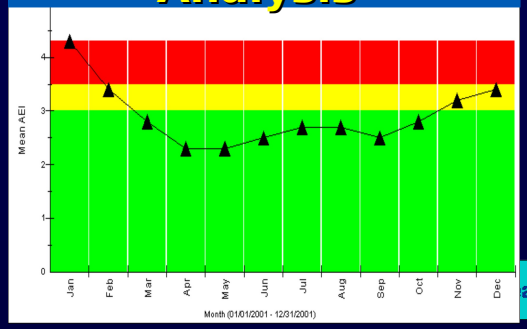
Capabilities

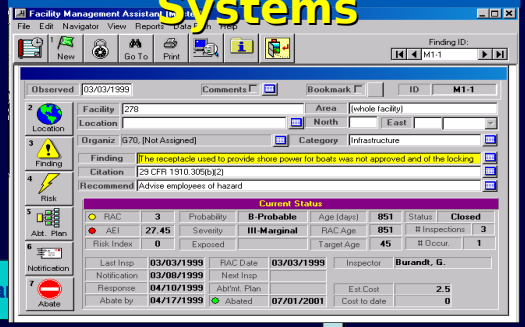
Conditions Assessment

Risk Management Training

Analysis



Information Systems

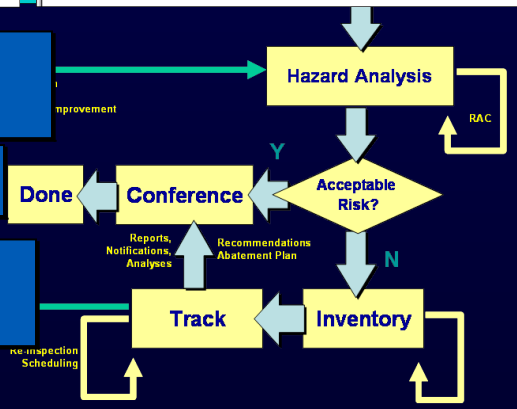


Mobile Applications

Program Development

Re-engineering

Instrument Interfaces



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Current Work

Army Installation Management Agency – Europe

- Developing Multi-Installation Model (IMA, ASG, BSB, Installation)
- Thin Client Deployment (CITRIX)
- Training

Architect of the Capitol

- Implement FMA, Incident, train (Safety, IH, Fire, Env, Legal)
- Policy / Program development
- Mentoring

USMC HQ / Camp Lejeune/ Pendleton / MARFORLANT, Barstow

- Implement FMA, Incident, train (Safety, Fire Protection, Other)
- Inspection Support, Maximo

Defense Threat Reduction Agency (DTRA)

- Implement FMA, multiple installations / countries

Defense Intelligence Agency

- Deploy FMA to Missile & Space Intelligence Center
- Tailor Incident Analysis Module

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What is FMA?

Software, methodology, hardware

10 years (DOD, Intel, Federal, Private)

Conditions Assessment (Inspections)

Issues Management

ESOH, Fire, Weapons, AT/FP, etc.

ORM, DODI 6055.1, AFI, OSHA, etc.

Collaboration

Activity Based Costing Link

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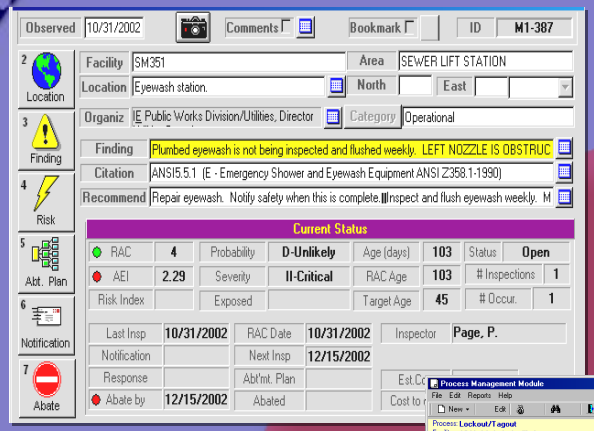
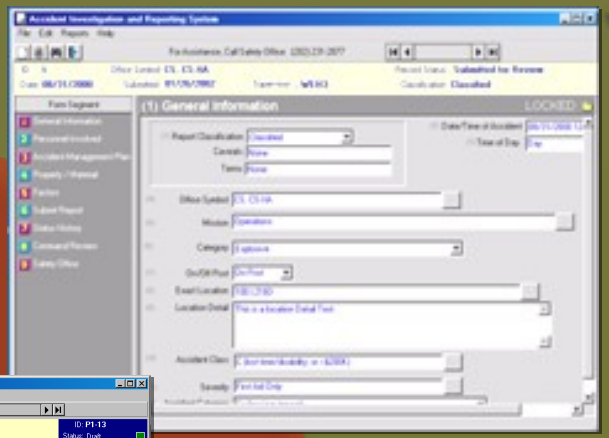
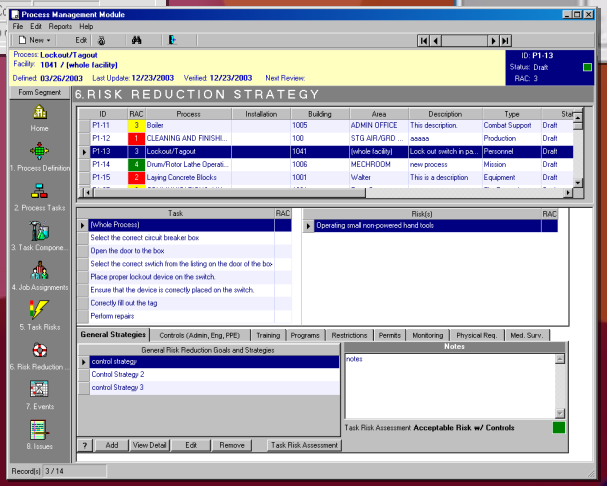
Inspections / Audits

Incidents / Near Misses

Process Risk Analyses







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Supports

Operational Risk Assessment

29 CFR 1910 / 1926 / 40 CFR

DODI 6055.1

DODI 6055.7

USMC 5100.8F

Navy OP-5 (explosives)

ISO 9000 / 14001

Fire Protection

Vulnerability Assessments

Voluntary Protection Program

AFI 91-202, 91-204, 91-301, AFOSH

ECAMP / ESOHCAMP

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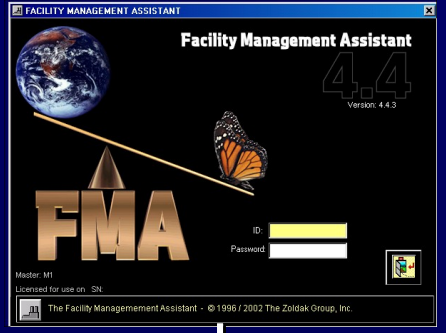
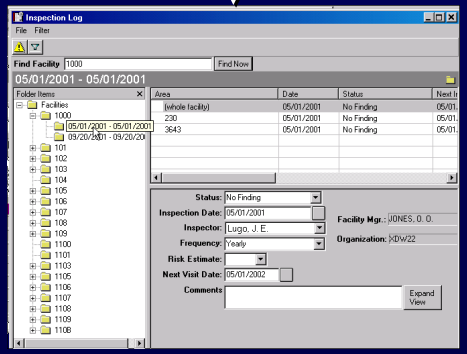
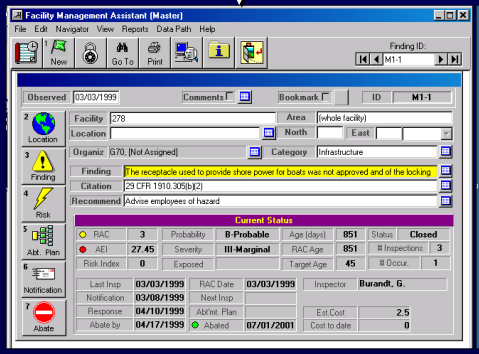
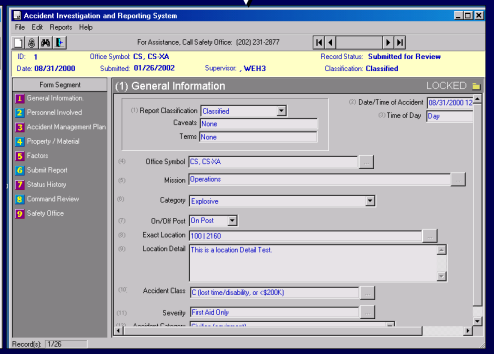




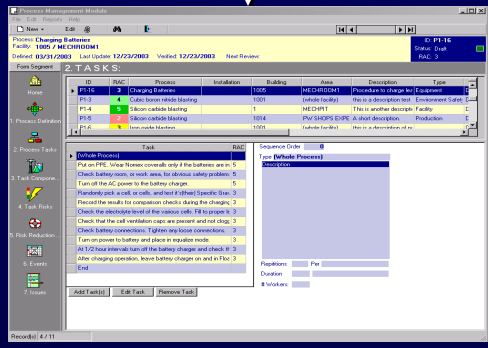
Inspection Log



Finding

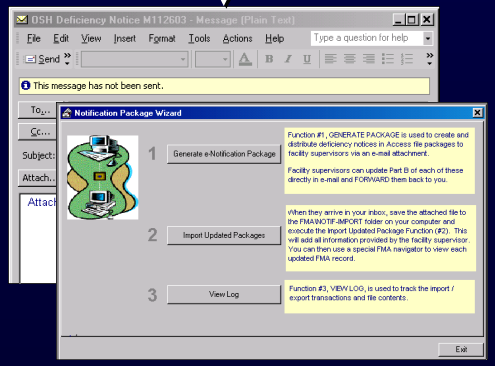


Accident / Incident

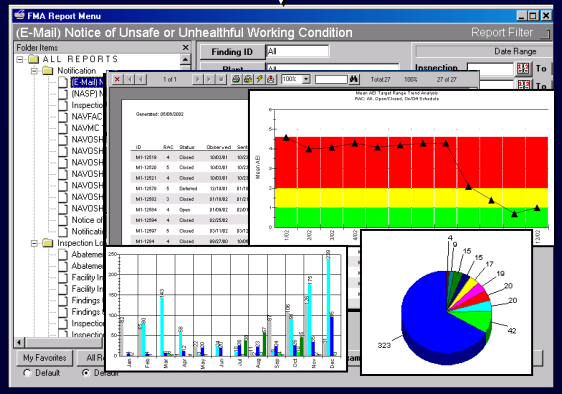


Job Hazard Analysis / PRA

Navigator



Communications



Report & Analysis

Mobile

Digital Media

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Proven

NSA: 80% ↓ Inspection Cycle Time, VPP.

NSA: ACOEM Corporate Health Achievement Award: 2000 / 2001.

NSWC Indian Head: Abatement 1,000 legacy findings in 3 months.

USMC: OSD Worker Safety Demo Program Best Practice (Pendleton, Lejeune).

USMC: BearingPoint BPI: “FMA should be used as an installation-wide inspection & risk management tool.”

Multi-Agency.

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FMA Users

- National Security Agency
- Navy Region Pensacola
- NAS Whiting Field
- Naval Surface Warfare Center Dahlgren
- Naval Surface Warfare Center Indian Head
- Naval Station Norfolk
- Defense Intelligence Agency
- USMC Camp Lejeune
- USMC Marine Corps Base Hawaii
- USMC Camp Pendleton
- MCAS Cherry Point
- MCAS Beaufort
- USMC Parris Island
- MCAS New River
- Air Force (AFCSF) Classified Location
- Capitol, Supreme Court, Lib. Congress, etc.
- Missile and Space Intelligence Ctr (Redstone)
- IMA-e (multiple locations)
- Booze Allen Hamilton
- Defense Threat Reduction Agency (DTRA)

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Paradigm

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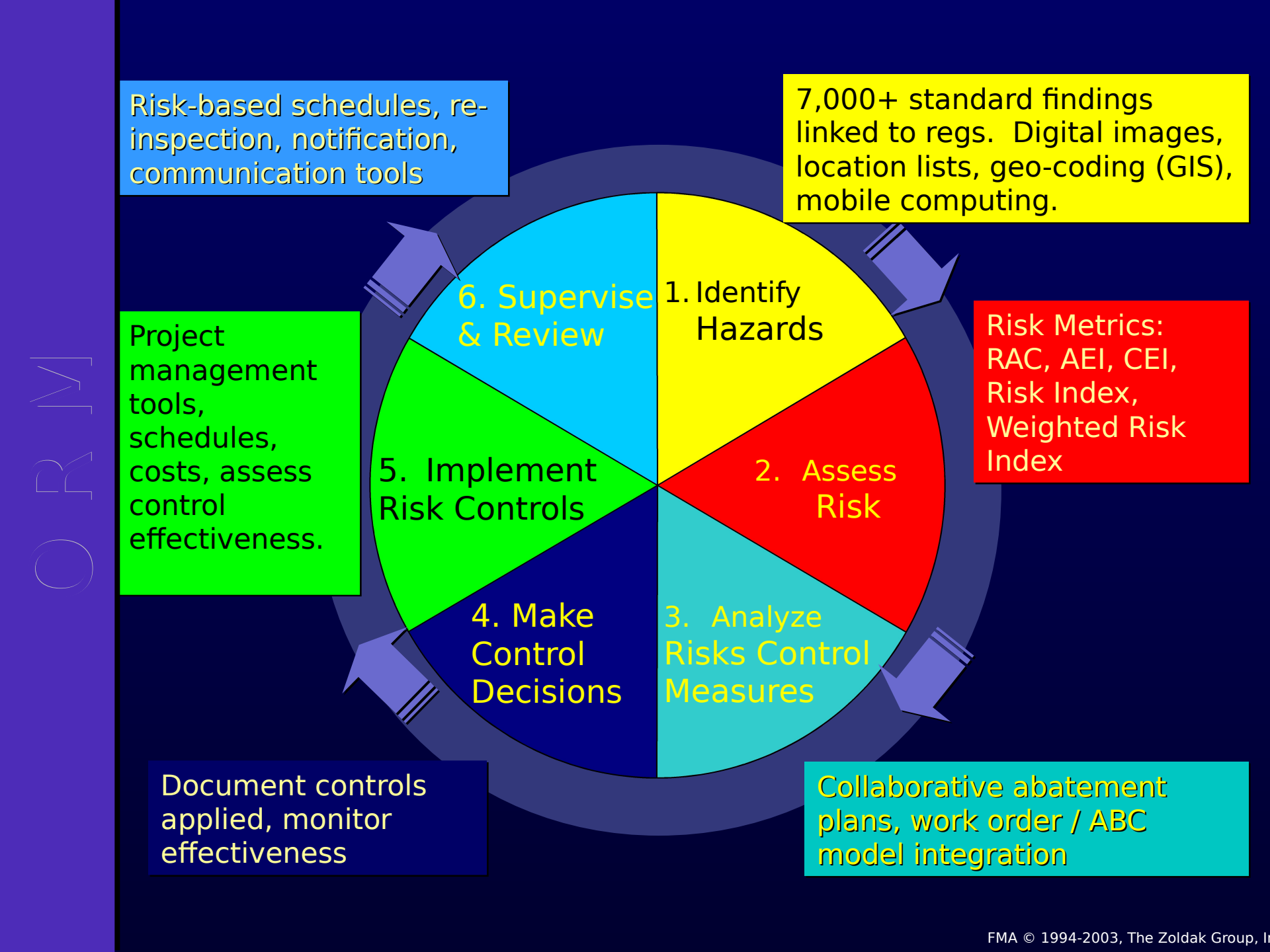
Risk-based schedules, re-inspection, notification, communication tools
7,000+ standard findings linked to regs. Digital images, location lists, geo-coding (GIS), mobile computing.
Project management tools, schedules, costs, assess control effectiveness.
Risk Metrics: RAC, AEI, CEI, Risk Index, Weighted Risk Index
6. Supervise & Review
1. Identify Hazards
5. Implement Risk Controls
2. Assess Risk
4. Make Control Decisions
3. Analyze Risks Control Measures
Document controls applied, monitor effectiveness
Collaborative abatement plans, work order / ABC model integration

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Agency Integration

Component

Secretariat / HQ

MajCom / installation

Installation ESOH

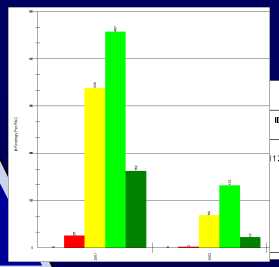
Program Staff

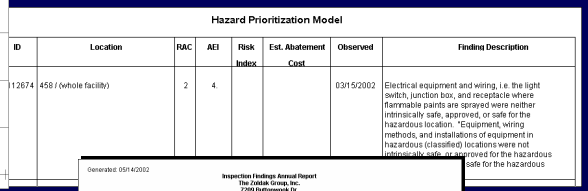
Decision Support

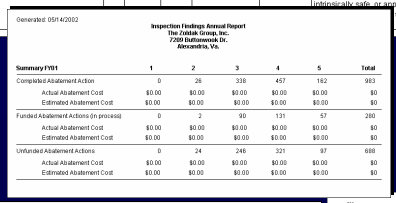
Program Management

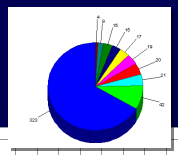
Raw Data

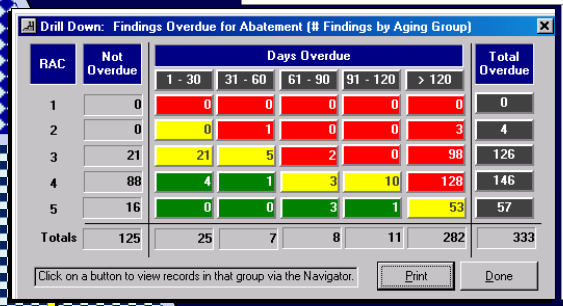
FMA Tools / Metrics

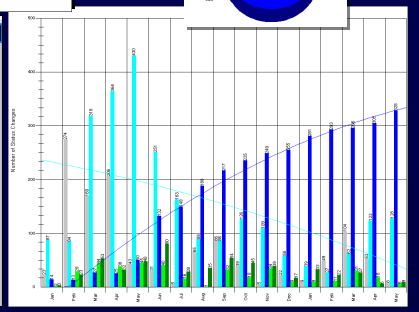


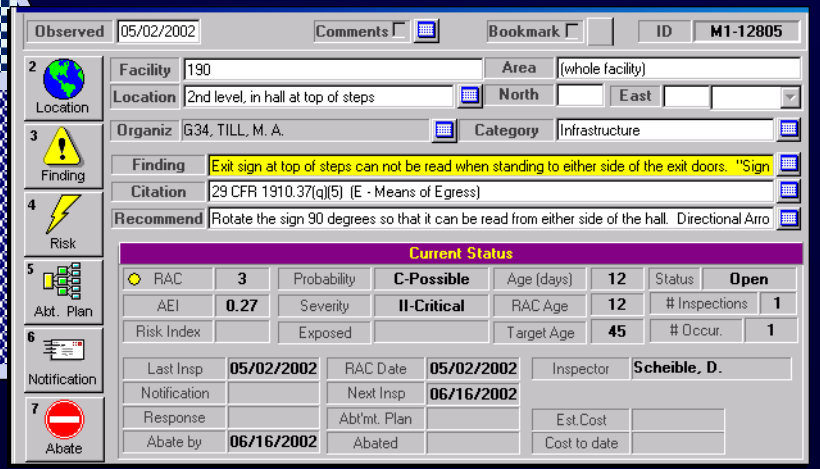

Hazard Prioritization Model
ID
Location
RAC
AEI
Risk Index
Est. Abatement Cost
Observed
Finding Description
12674
458 / (whole facility)
2
4
03/15/2002
Electrical equipment and wiring, i.e. the light switch, junction box, and receptacle where flammable paints are sprayed were neither intrinsically safe, approved, or safe for the hazardous location. "Equipment, wiring methods, and installations of equipment in hazardous (classified) locations were not






Drill Down: Findings Overdue for Abatement (# Findings by Aging Group)
RAC
Not Overdue
Days Overdue
1 - 30
31 - 60
61 - 90
91 - 120
> 120
Total Overdue
1 0 0 0 0 0 0
2 0 0 1 0 0 3 4
3 21 21 5 2 0 98 126
4 88 4 1 3 10 128 146
5 16 0 0 3 1 53 57
Totals 125 25 7 8 11 282 333
Click on a button to view records in that group via the Navigator.
Print
Done





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Methodology

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How shall I torture you today?
Put you on the rack? Boil you in oil?

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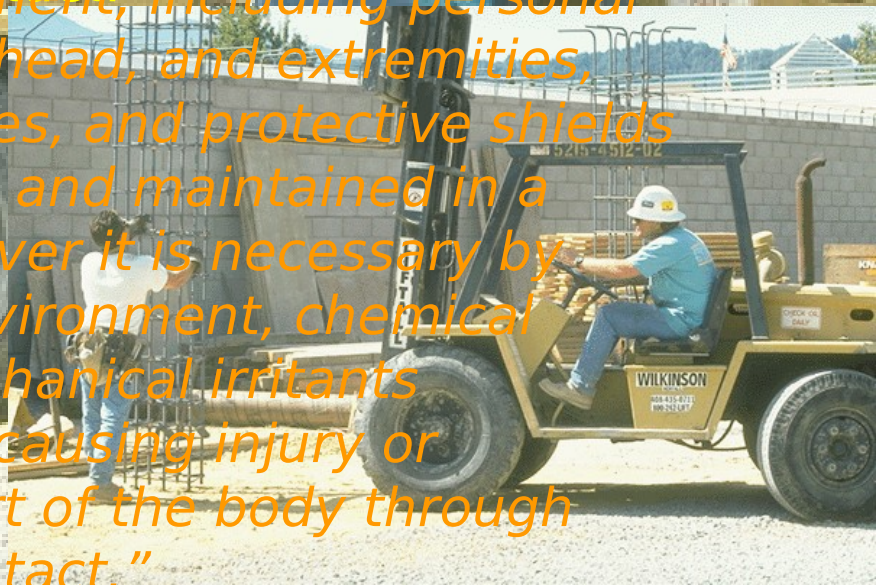
FMA Standard Finding:

1910.132(a)

Protective equipment was not used when necessary whenever hazards capable of causing injury and impairment were encountered.



1910.132(a)

OSHA: "Application. Protective equipment, including personal protective equipment for eyes, face, head, and extremities, protective clothing, respiratory devices, and protective shields and barriers, shall be provided, used, and maintained in a sanitary and reliable condition wherever it is necessary by reason of hazards of processes or environment, chemical hazards, radiological hazards, or mechanical irritants encountered in a manner capable of causing injury or impairment in the function of any part of the body through absorption, inhalation or physical contact."

Pocket Inspector

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Issues Management

Facility Management Assistant (Master)

File Edit Navigator View Reports Data Path Help

1 New | Go To | Print

Finding ID: M1-588

Observed 12/04/2002 | Comments | Bookmark | ID M1-588

2 Location
3 Finding
4 Risk
5 Abt. Plan
6 Notification
7 Abate

Facility BB69 | Area (whole facility)
Location | North | East
Organiz [Not Assigned], [Not Assigned] | Category Infrastructure

Finding: Electrical equipment was not free from recognized hazards that were likely to cause death or
Citation: 29 CFR 1910.303(b)(1) (S - Electrical)
Recommend:

Current Status

RAC	4	Probability	C-Possible	Age (days)	146	Status	Open
AEI	3.24	Severity	III-Marginal	RAC Age	146	# Inspections	1
Risk Index	0	Exposed		Target Age	45	# Occur.	1

Last Insp	12/04/2002	RAC Date	12/04/2002	Inspector	Crue, S.
Notification		Next Insp	01/18/2003		
Response		Abt'mt. Plan		Est.Cost	
Abate by	01/18/2003	Abated		Cost to date	

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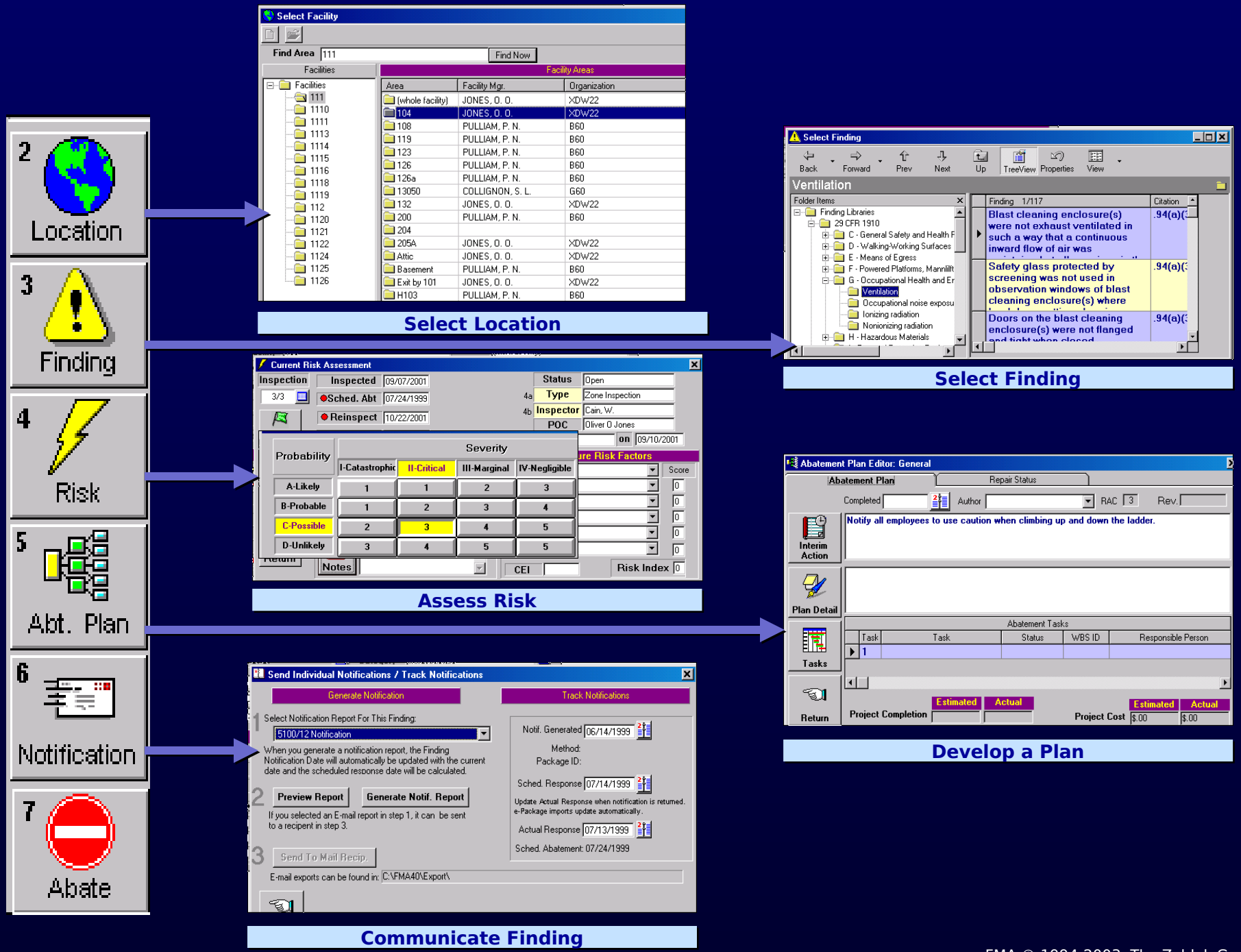

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Observed 03/21/2002 Comments Bookmark ID M1-12603

Facility 101 Area 11835

Location North East

Finding Image

picture5

Keyword(s)

Remove

Done

Date: 05/06/2002 Inspection Finding Summary with Photo(s) 1 of 1

ID: **M1-12603** RAC: **4** Sched. Abatement: **07/28/2002** Abated: Age: **7** AEI: **0.08**

Observed: **03/21/2002** Last Inspect: **04/29/2002** Inspector: **Dove, T.** Est. Abatement Cost:

Notification: **04/29/2002** Sched Resp: Response: Total Cost:

LOCATION

Facility: 101, 11835

Location:

Org: K41, BOYLES, H. J.

DESCRIPTION

Finding: Electrical equipment was not free from recognized hazards that were likely to cause death or serious physical harm to employees. exposed wires on coffee machine.

Citation: 29 CFR 1910.303(b)(1) (S - Electrical)

Recommendation: remove coffee pot

Comments:

DESCRIPTION

Interim Action:

Plan Detail:

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Digital Media Center

ZGI Media Center

Form Segment

Home

Image_Name
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C:\FMA40\Find_Ima\M139 HANDRAILS1.JPG
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C:\FMA40\Find_Ima\DSC00025 (2).JPG
C:\FMA40\Find_Ima\DSC00020 (2).JPG
C:\FMA40\Find_Ima\DSC00022.JPG
C:\FMA40\Find_Ima\M139 COLUMNS1.JPG

SBA108_103001_WIRING.JPG V

M350CONF_SPACE103102.JPG V

M139HOTWIRE103102-1.JPG V

M139 HANDRAILS1.JPG V

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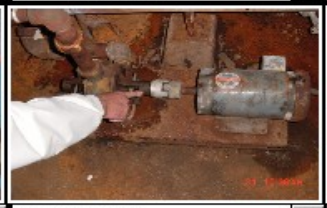
DSC00022.JPG V

M139 COLUMNS1.JPG V

M139STEELSUPPORT1.JPG V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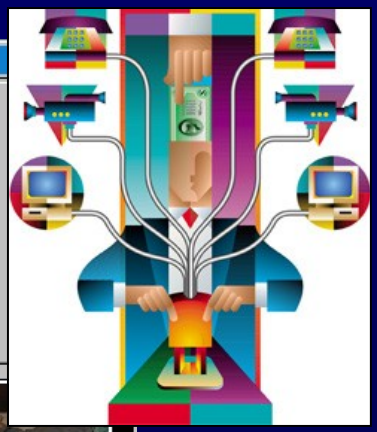
RR15_103002_LOCKOUT.JPG V

RR15_103002_CONTAINERS.JP V

RR15GOGGLES103002.JPG V

SM351EYEWASH103102-1.JPG V



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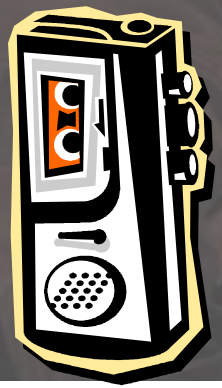

Generated: 05/06/2002

ID	RAC	Status	Observed	Sent	Respond by	Received	Abate by	Send To
M1-12519	4	Closed	10/03/01	10/23/01	11/22/01		01/01/02	JONES, O. O. 1118 / (whole facility)
M1-12520	5	Closed	10/03/01	10/23/01	11/22/01		01/31/02	MORAN, S. L. 1118 / 101
M1-12521	4	Closed	10/03/01	10/23/01	11/22/01		01/01/02	JONES, O. O. 1118 / 103
M1-12579	5	Deferred	12/19/01	01/18/02	02/17/02		04/18/02	Herndon, D. O. 188 / 188 (Whole Facility)
M1-12582	3	Closed	01/18/02	01/21/02	02/20/02	03/12/02	03/04/02	Delacruz, A. 218 / Hallway
M1-12584	4	Open	01/09/02	02/01/02	03/03/02		04/09/02	MASON, R. M. 143 / (whole facility)
M1-12594	4	Closed	02/25/02				04/11/02	BOYLES, H. J. 101 / 11835
M1-12597	5	Closed	03/11/02	03/12/02	04/11/02	03/12/02	06/09/02	Dean, S. 100 / 2160
M1-1284	4	Closed	09/27/00	10/06/00	11/05/00	03/06/01	02/03/01	MORAN, S. L. 1118 / 102
M1-1285	3	Closed	09/27/00	10/06/00	11/05/00	12/13/00	11/11/00	MORAN, S. L. 1118 / 102
M1-1286	3	Closed	09/27/00	10/06/00	11/05/00		12/20/00	MORAN, S. L. 1118 / 102
M1-1287	3	Closed	09/27/00	10/06/00	11/05/00	12/13/00	11/11/00	MORAN, S. L. 1118 / 102
M1-1288	4	Closed	09/27/00	10/06/00	11/05/00	12/13/00	12/26/00	MORAN, S. L. 1118 / 101
M1-1289	3	Closed	09/27/00	10/06/00	11/05/00	12/13/00	11/11/00	MORAN, S. L. 1118 / 101

Collaboration

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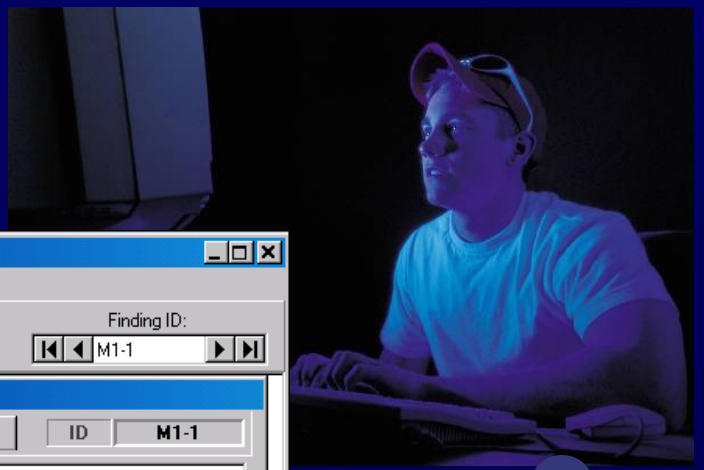

Facility Management Assistant (Master)

File Edit Navigator View Reports Data Path Help

New | Go To | Print | Finding ID: M1-1

Observed 03/03/1999 | Comments | Bookmark | ID M1-1

2 Location
3 Finding
4 Risk
5 Abt. Plan
6 Notification
7 Abate

Facility 278 | Area (whole facility)

Location | North | East

Organiz G70, [Not Assigned] | Category Infrastructure

Finding The receptacle used to provide shore power for boats was not approved and of the locking

Citation 29 CFR 1910.305(b)(2)

Recommend Advise employees of hazard

Current Status

RAC	3	Probability	B-Probable	Age (days)	851	Status	Closed
AEI	27.45	Severity	III-Marginal	RAC Age	851	# Inspections	3
Risk Index	0	Exposed		Target Age	45	# Occur.	1

Last Insp	03/03/1999	RAC Date	03/03/1999	Inspector	Burandt, G.
Notification	03/08/1999	Next Insp			
Response	04/10/1999	Abt'mt. Plan		Est.Cost	2.5
Abate by	04/17/1999	Abated	07/01/2001	Cost to date	0

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Navigation

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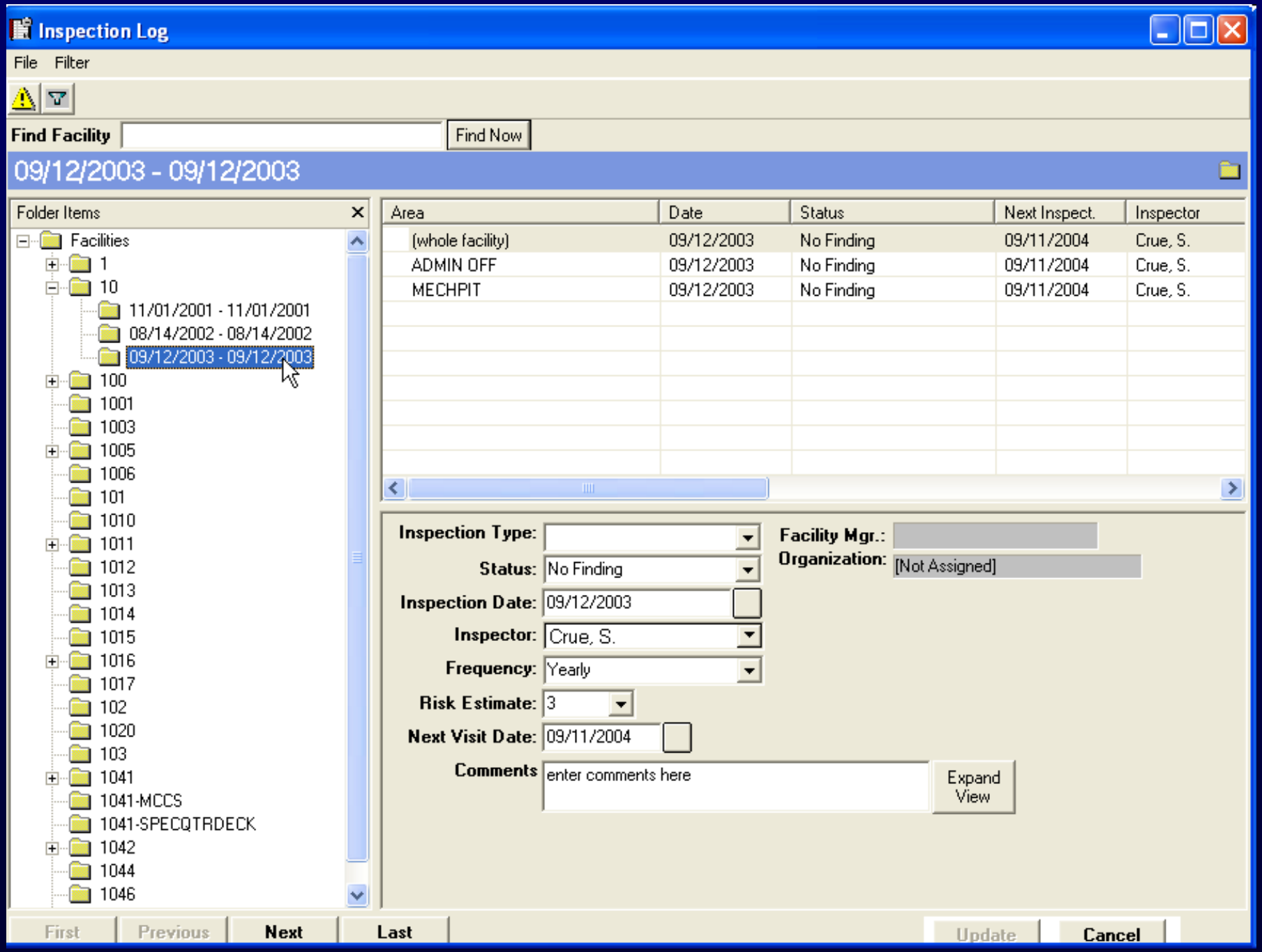

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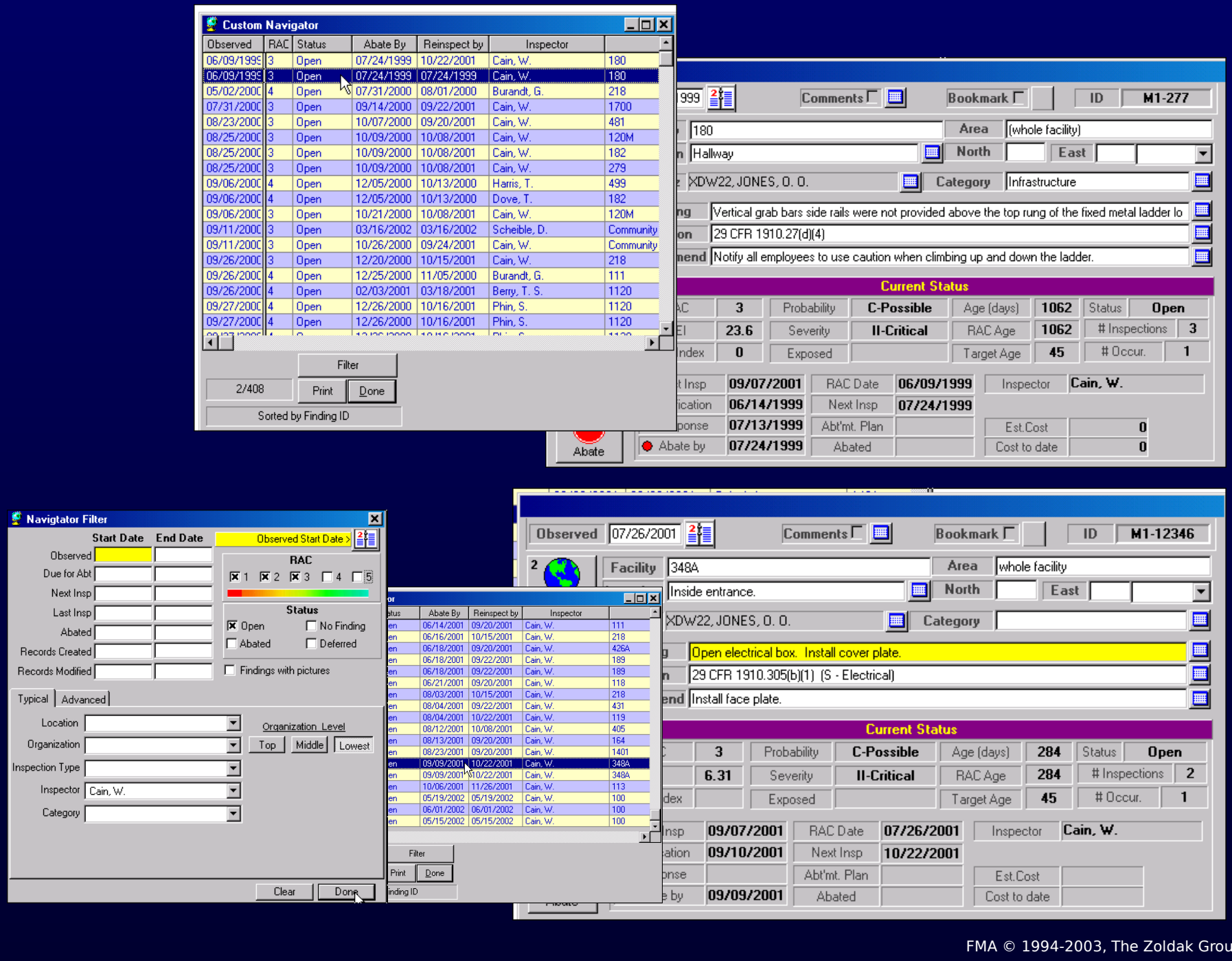

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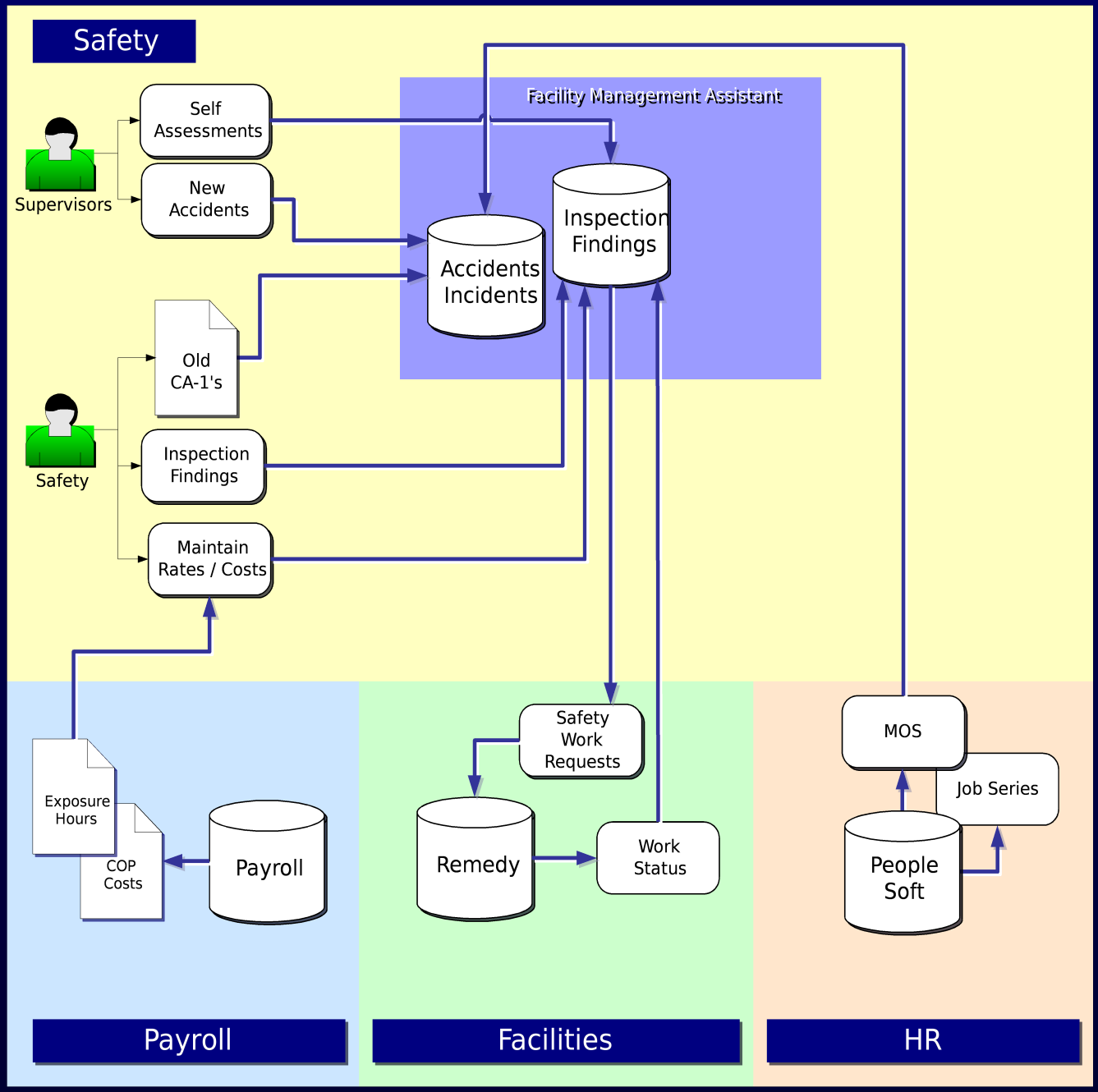

Defense Intelligence Agency

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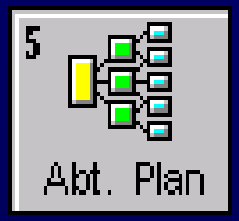
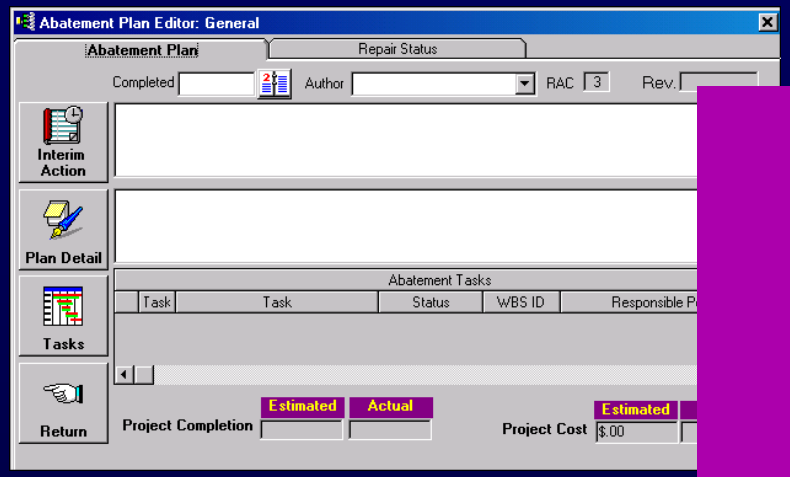
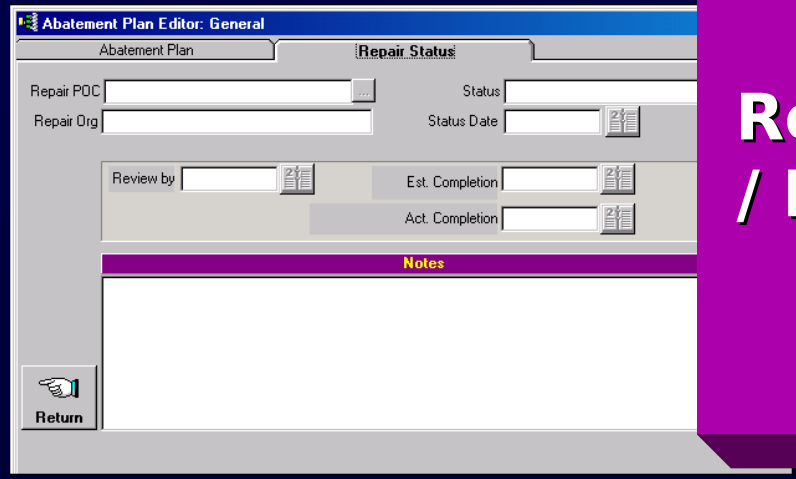


FMA

Work Orders





Recognition / Evaluation

Work Planning / Execution

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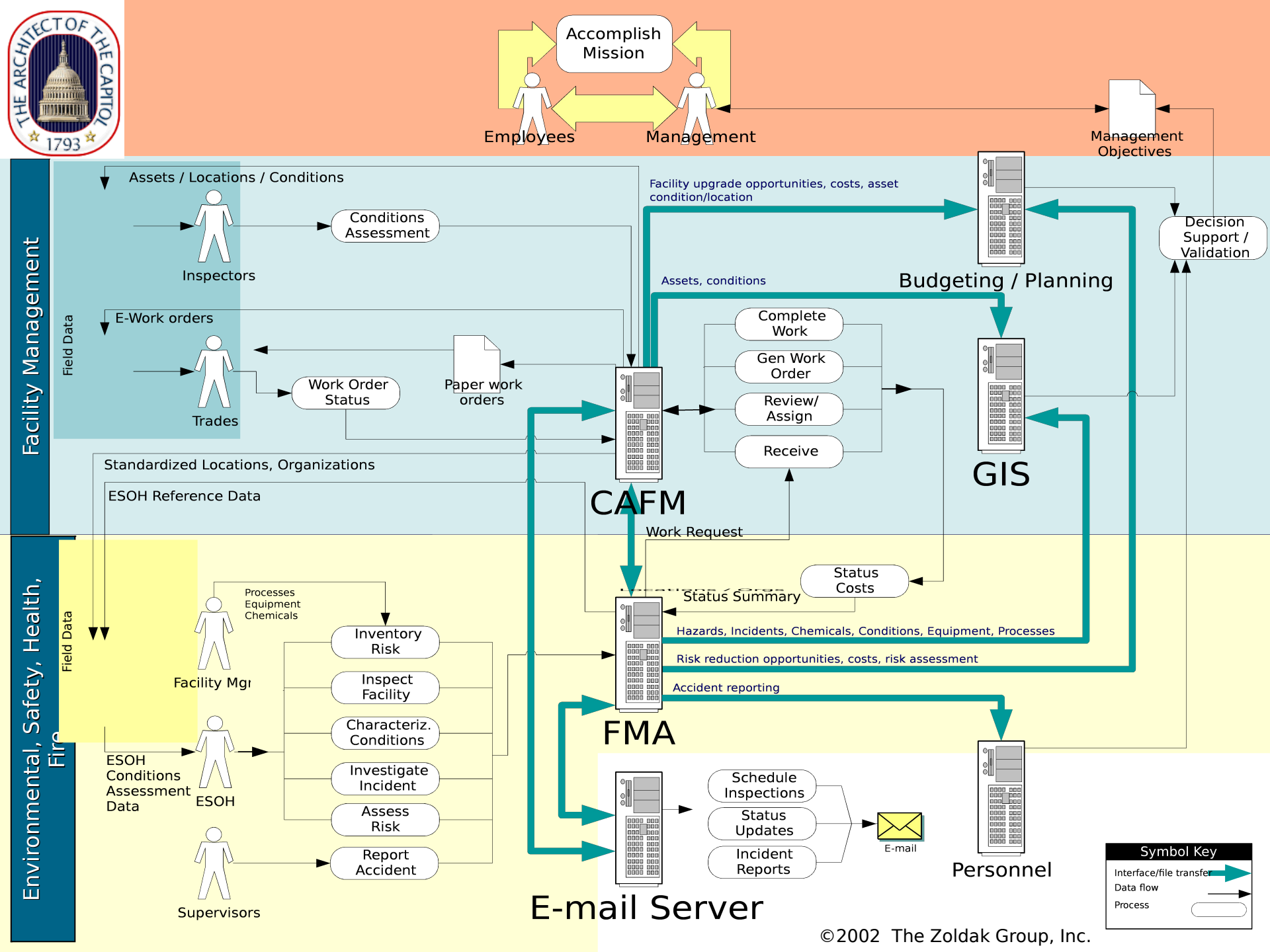
Accomplish Mission
Employees
Management
Management Objectives
Facility Management
Assets / Locations / Conditions
Conditions Assessment
Inspectors
Facility upgrade opportunities, costs, asset condition/location
Decision Support / Validation
Budgeting / Planning
Assets, conditions
Field Data
E-Work orders
Trades
Work Order Status
Paper work orders
Complete Work
Gen Work Order
Review/ Assign
Receive
GIS
Standardized Locations, Organizations
ESOH Reference Data
CAFM
Work Request
Status Costs
Status Summary
Environmental, Safety, Health, Fire
Field Data
Processes
Equipment
Chemicals
Facility Mgr
Inventory Risk
Inspect Facility
Characteriz. Conditions
Investigate Incident
Assess Risk
Report Accident
ESOH Conditions Assessment Data
ESOH
Supervisors
Hazards, Incidents, Chemicals, Conditions, Equipment, Processes
Risk reduction opportunities, costs, risk assessment
Accident reporting
FMA
Schedule Inspections
Status Updates
Incident Reports
E-mail
Personnel
E-mail Server
Symbol Key
Interface/file transfer
Data flow
Process
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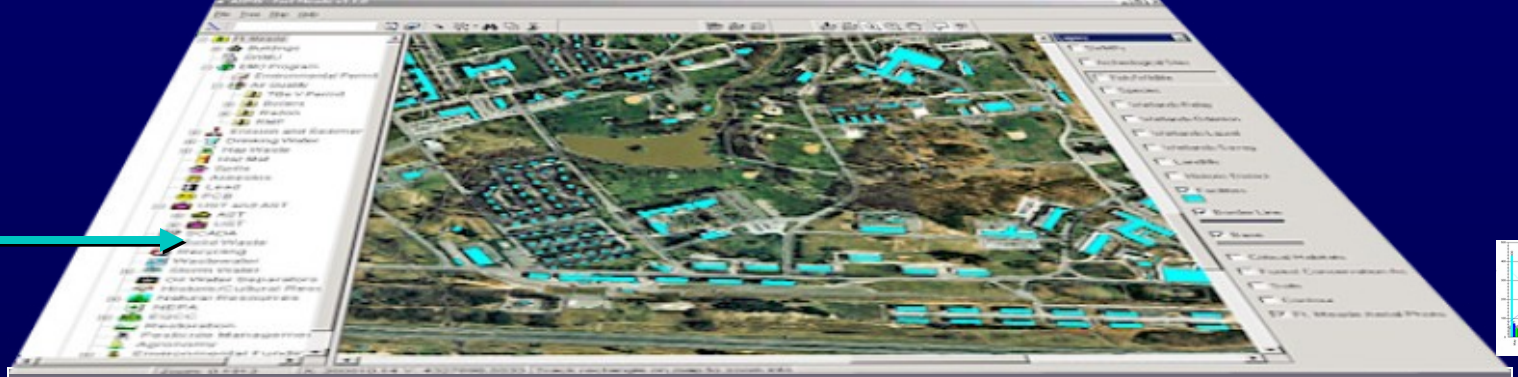

I_2VMS Geospatial Analysis

TRC TARSIS Models

FMA Conditions Assessment / Issues Management

Locations

Apply Model to Data

Inspections
Conditions Assessments
Audits

Issues

Photos

Incidents

PRA/JSA

Other

Analyses

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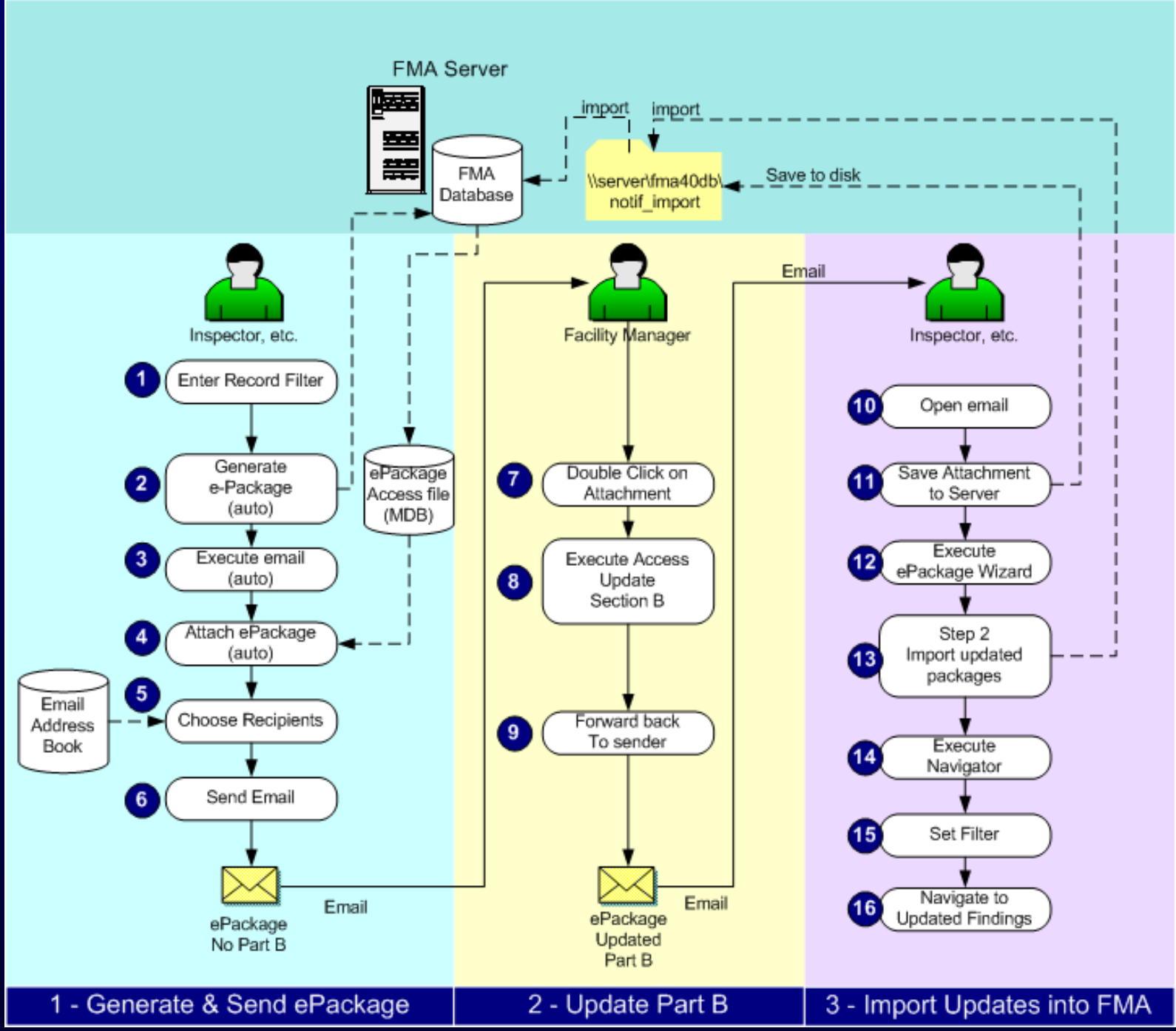
ePackage



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Reports

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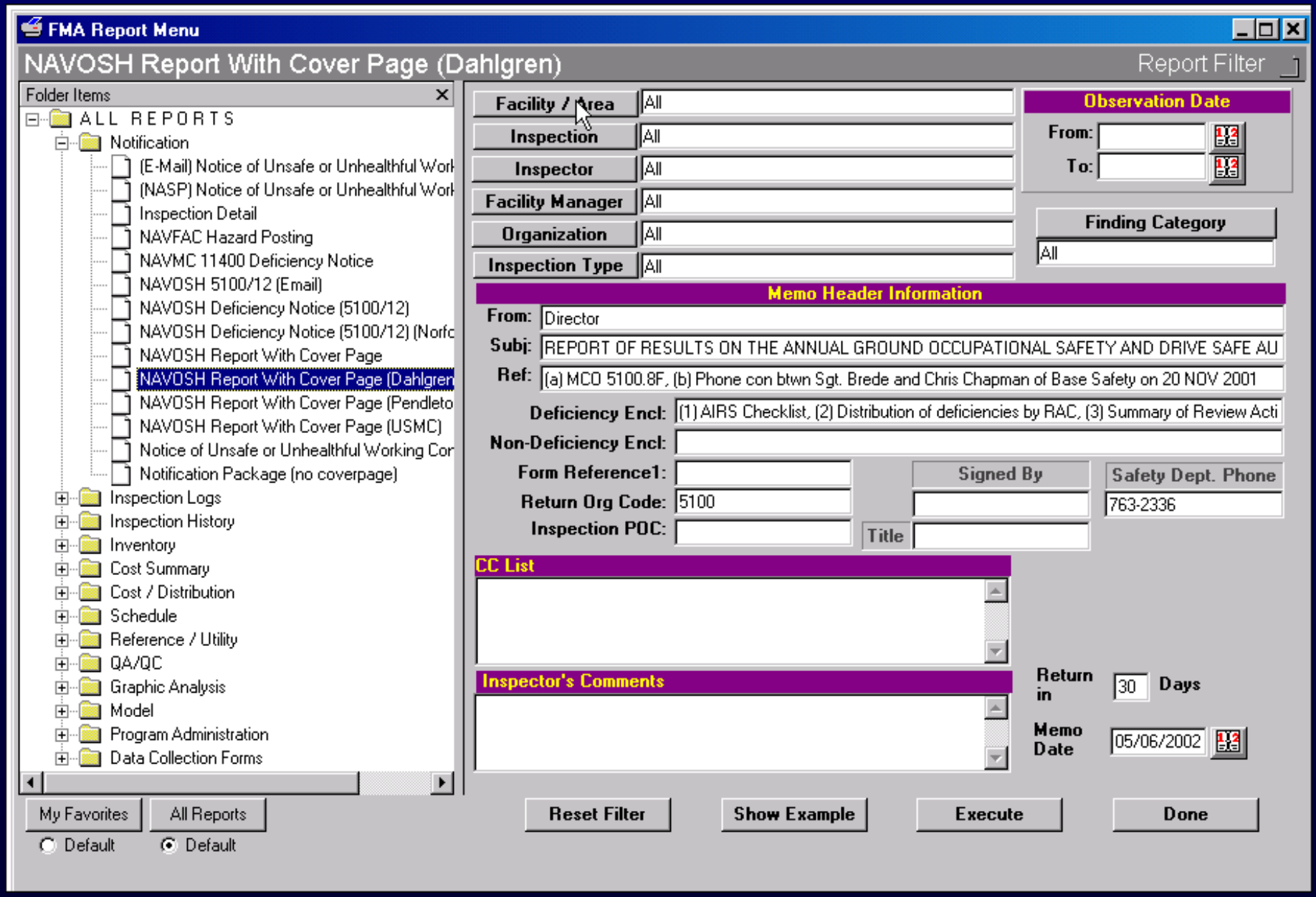

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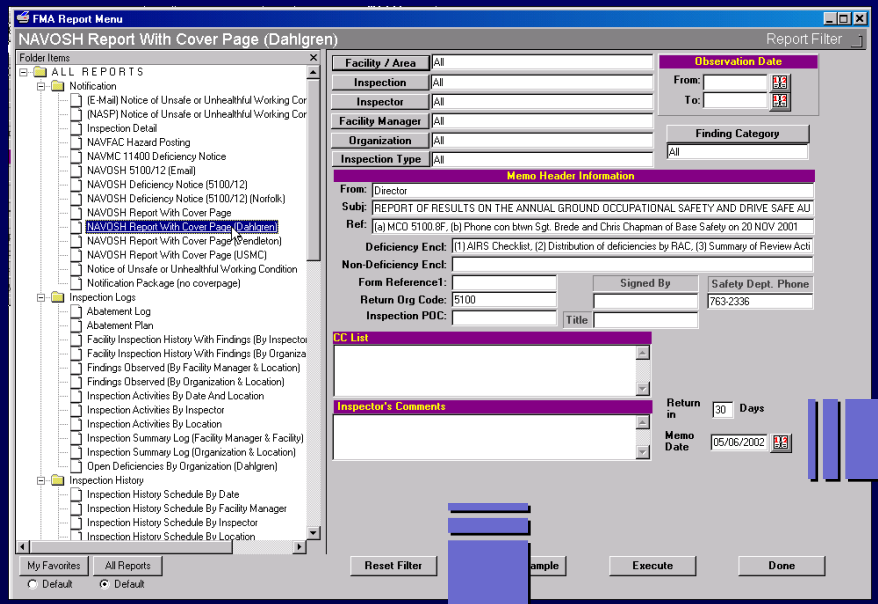

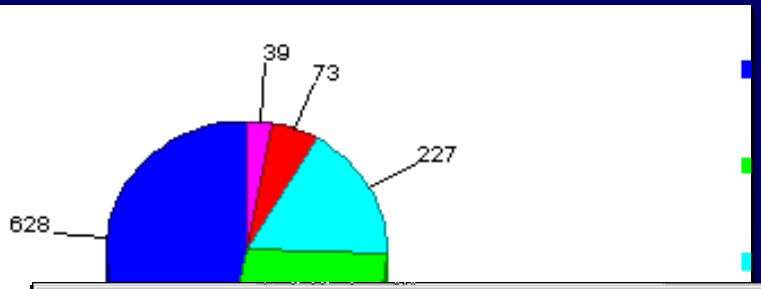

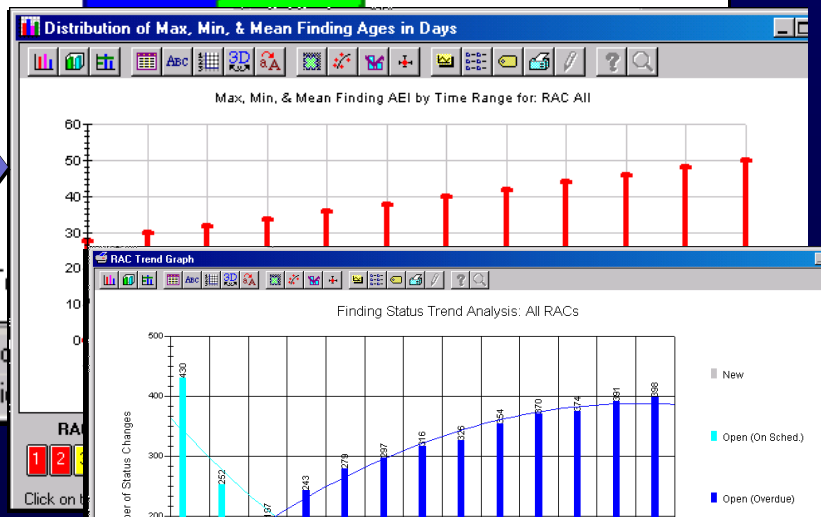

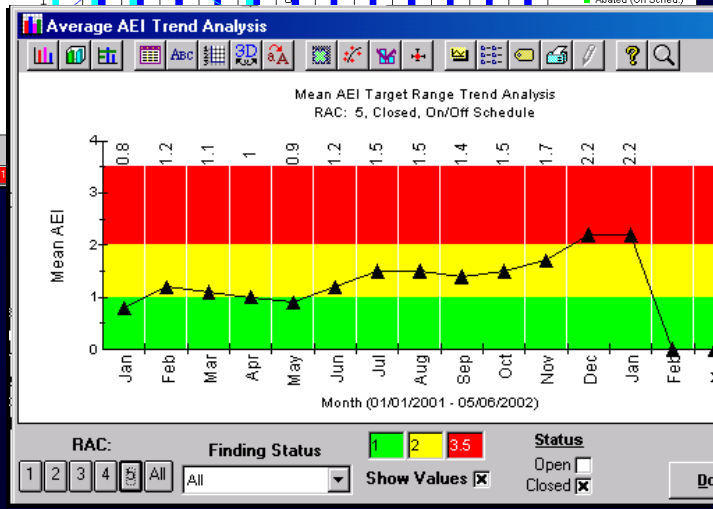

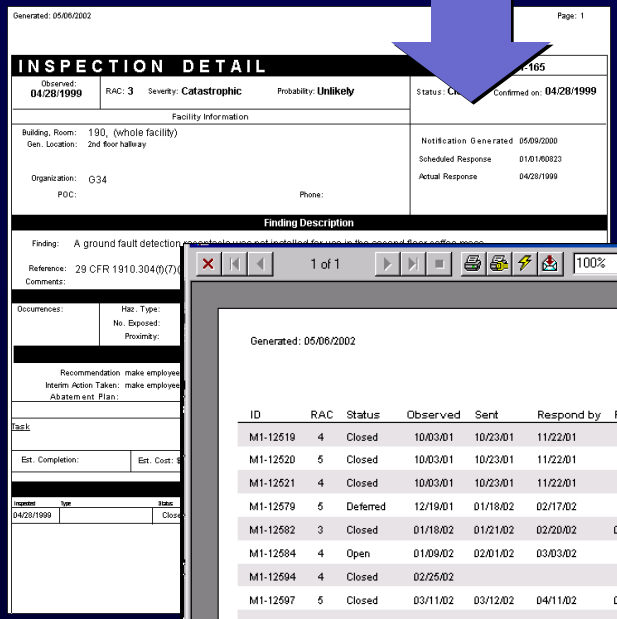

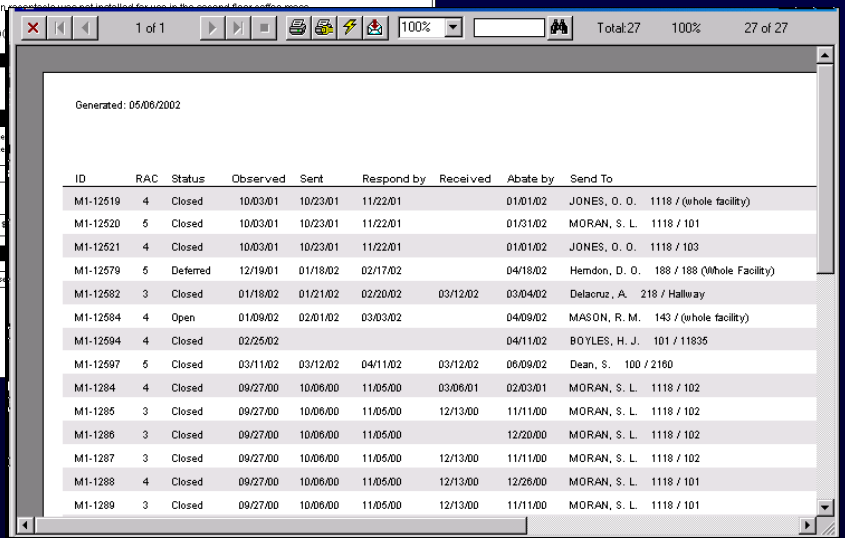

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Inspector Performance History

Installation Security and Safety Department
Installation Safety Division
Building 1208 Marine Corps Base Camp Lejeune

Inspector			Number of Findings Observed								
			Open (RAC)								
			1	2	3	4	5	Total	Abated	Deferred	Total
Scott, M. A.											
Bldg: TT17	F		0	0	1	0	3	4	0	0	0
Bldg: TT18	F		0	0	1	1	2	4	0	0	0
		Total:	0	1	16	31	37	85	0	0	0
February, 2002											
Bldg: 1211	F		0	0	1	1	1	3	0	0	0
Bldg: 1306	F		0	0	3	4	1	8	0	0	0
Bldg: 1403	F		0	0	0	1	3	4	0	0	0
Bldg: 313	F		0	1	4	4	4	13	0	0	0
Bldg: FC310	F		0	0	0	6	1	7	0	0	0
Bldg: FC311	F		0	0	1	2	0	3	0	0	0
Bldg: 1	F		0	0	0	0	0	0	0	0	0
Bldg: 901	F		0	0	0	1	0	1	0	0	0
		Total:	0	1	9	19	10	39	0	0	0
Totals For Scott, M. A.			0	2	26	50	48	126	0	0	0

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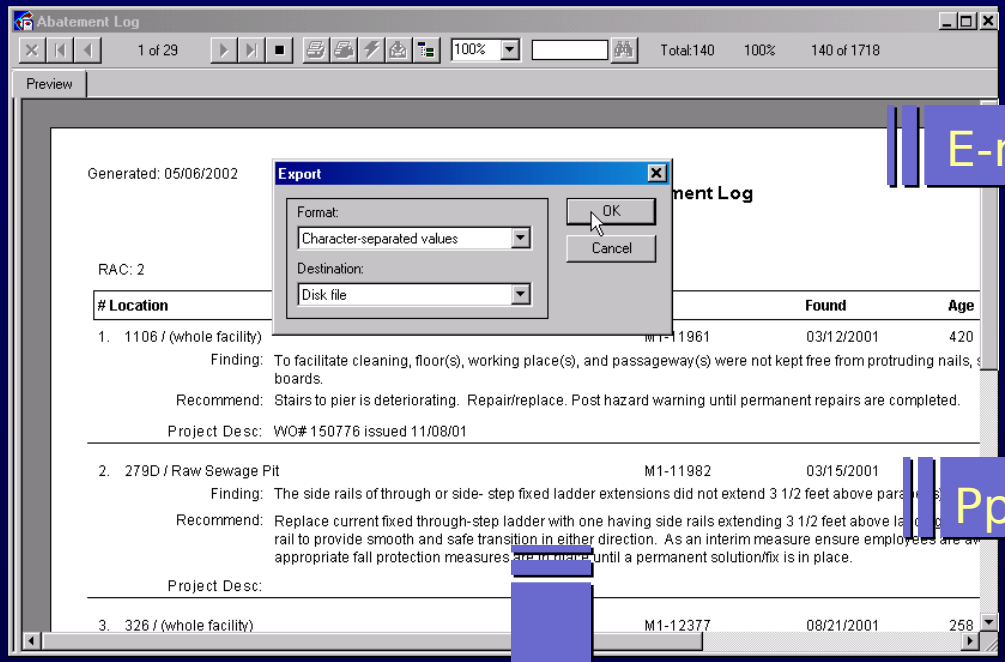
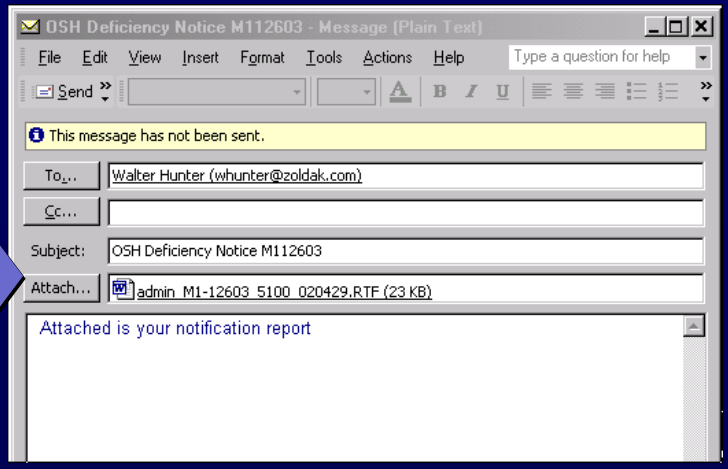
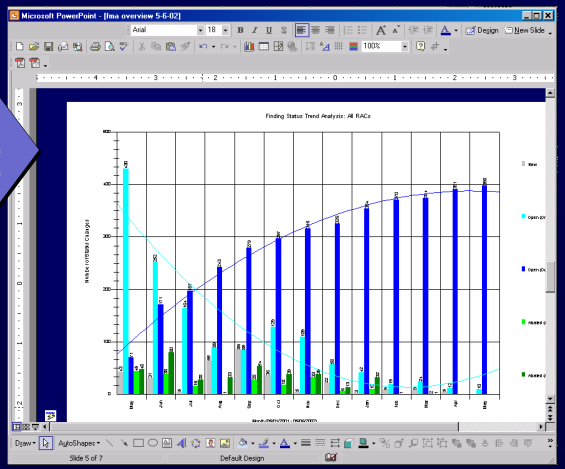


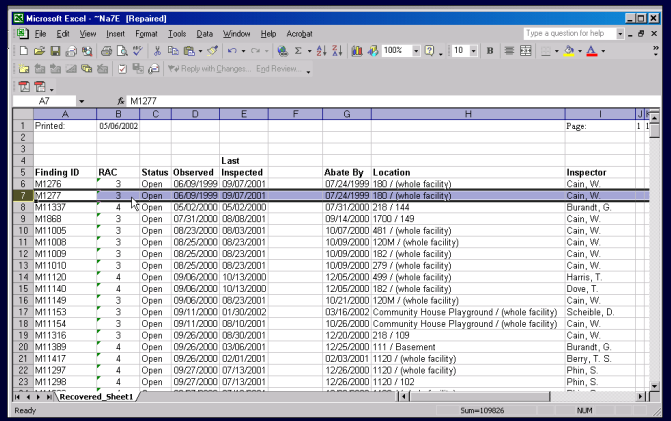


E-mail



Ppoint

Excel



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Metrics

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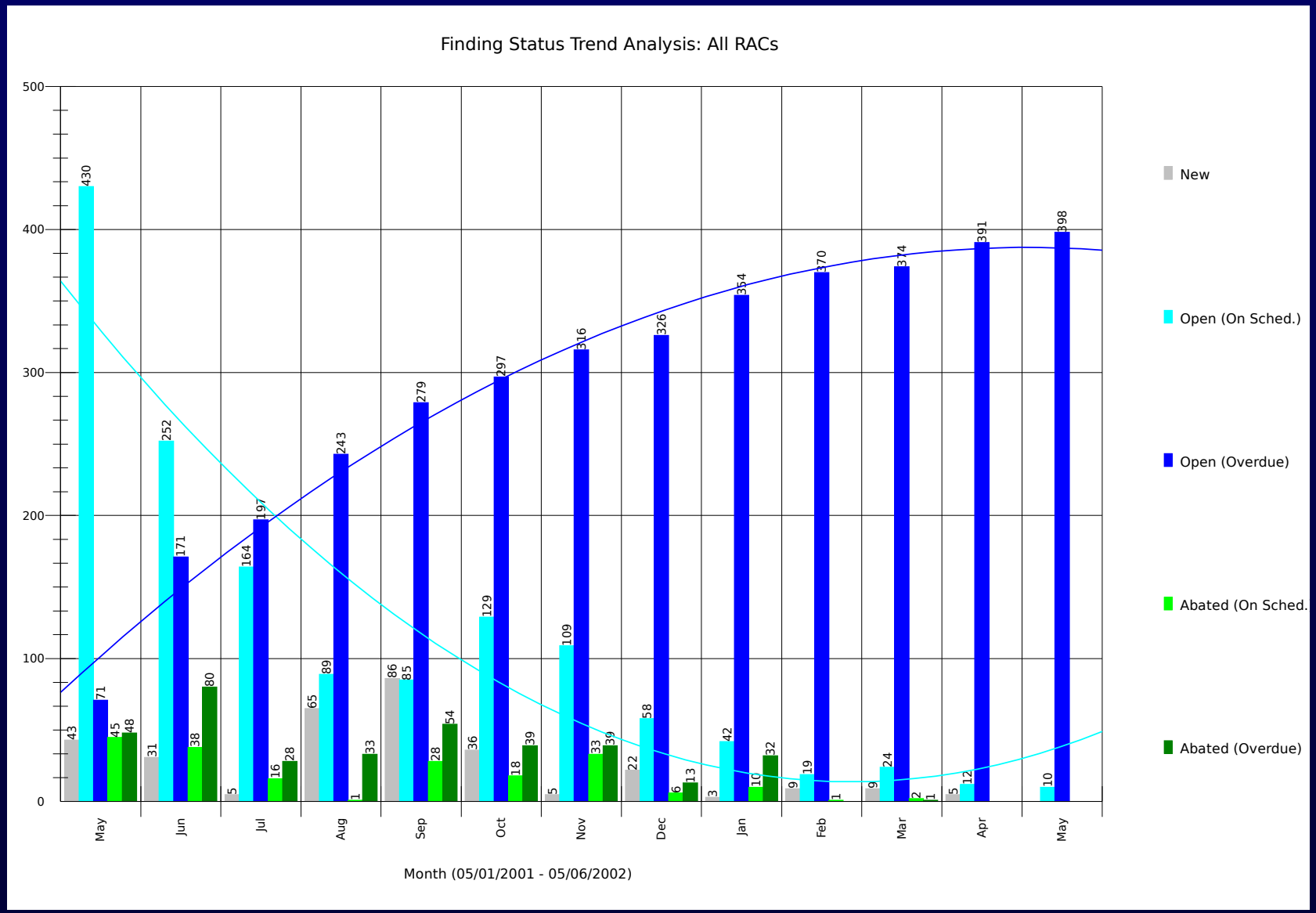

Performance Trend Analysis: New, Backlog, Abated

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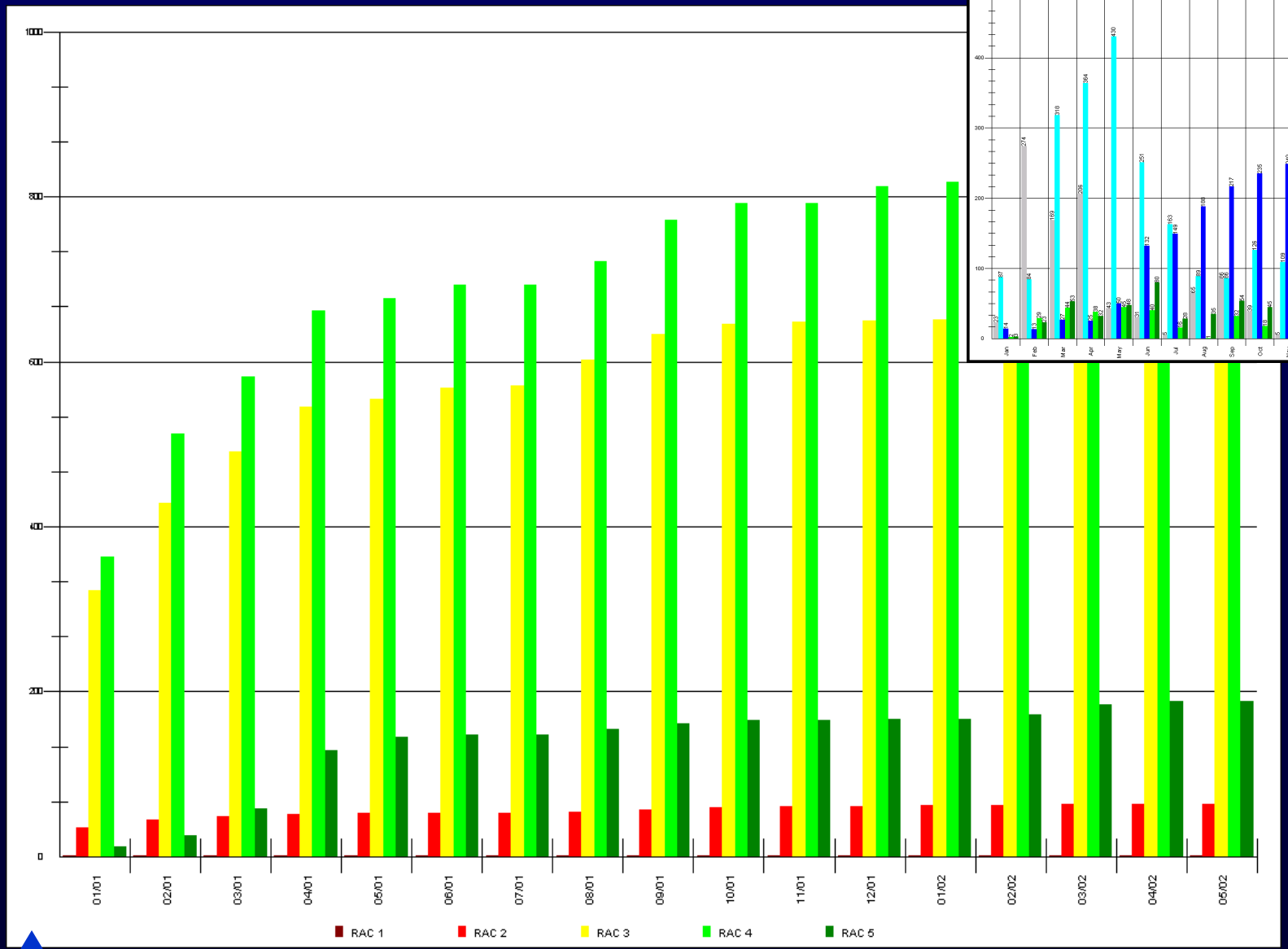
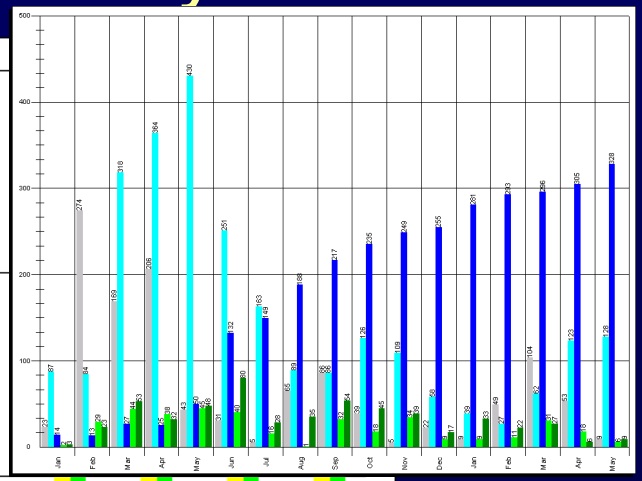
Program Management: Backlog Analysis





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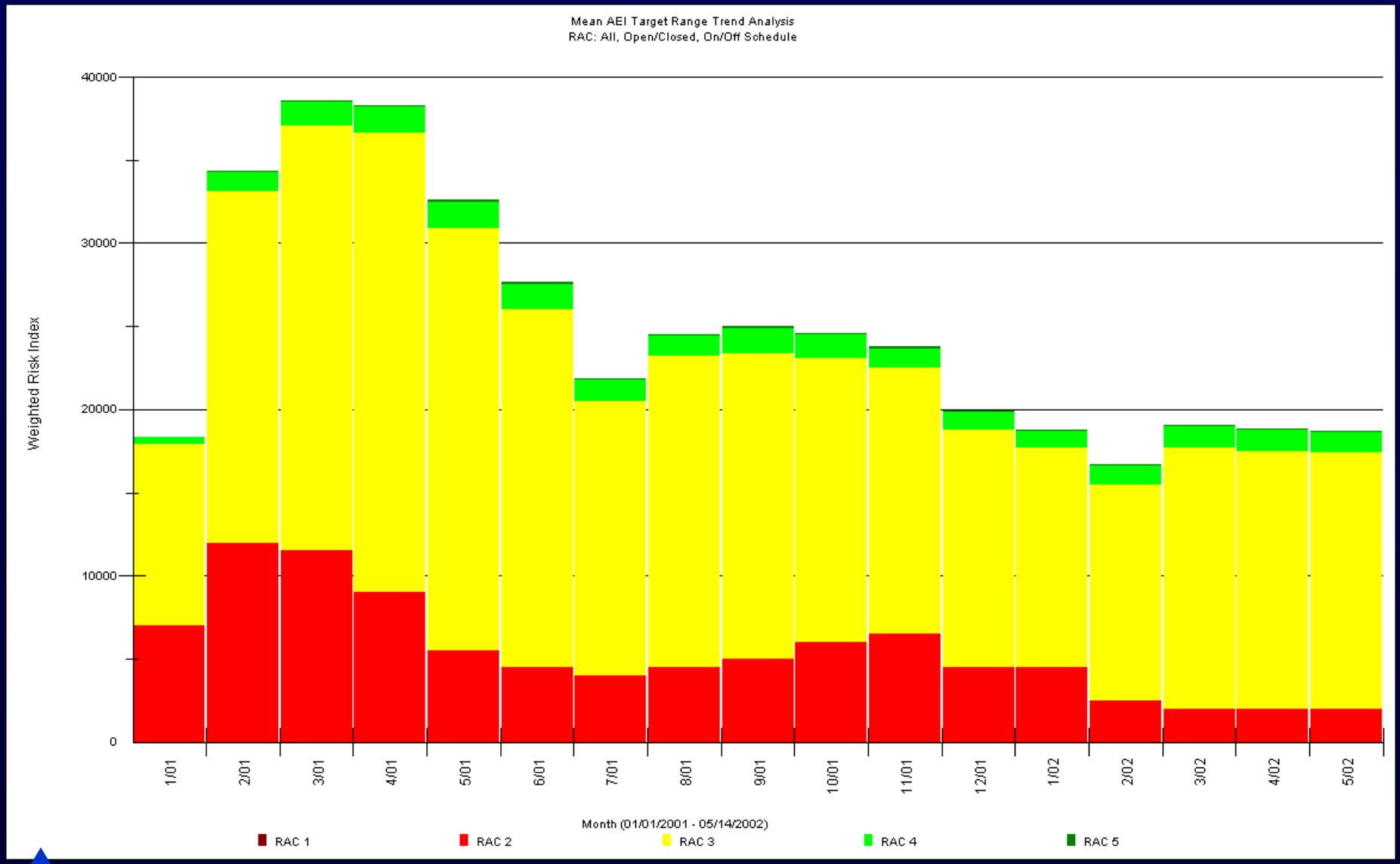
Overall Risk Assessment: Weighted Risk Index



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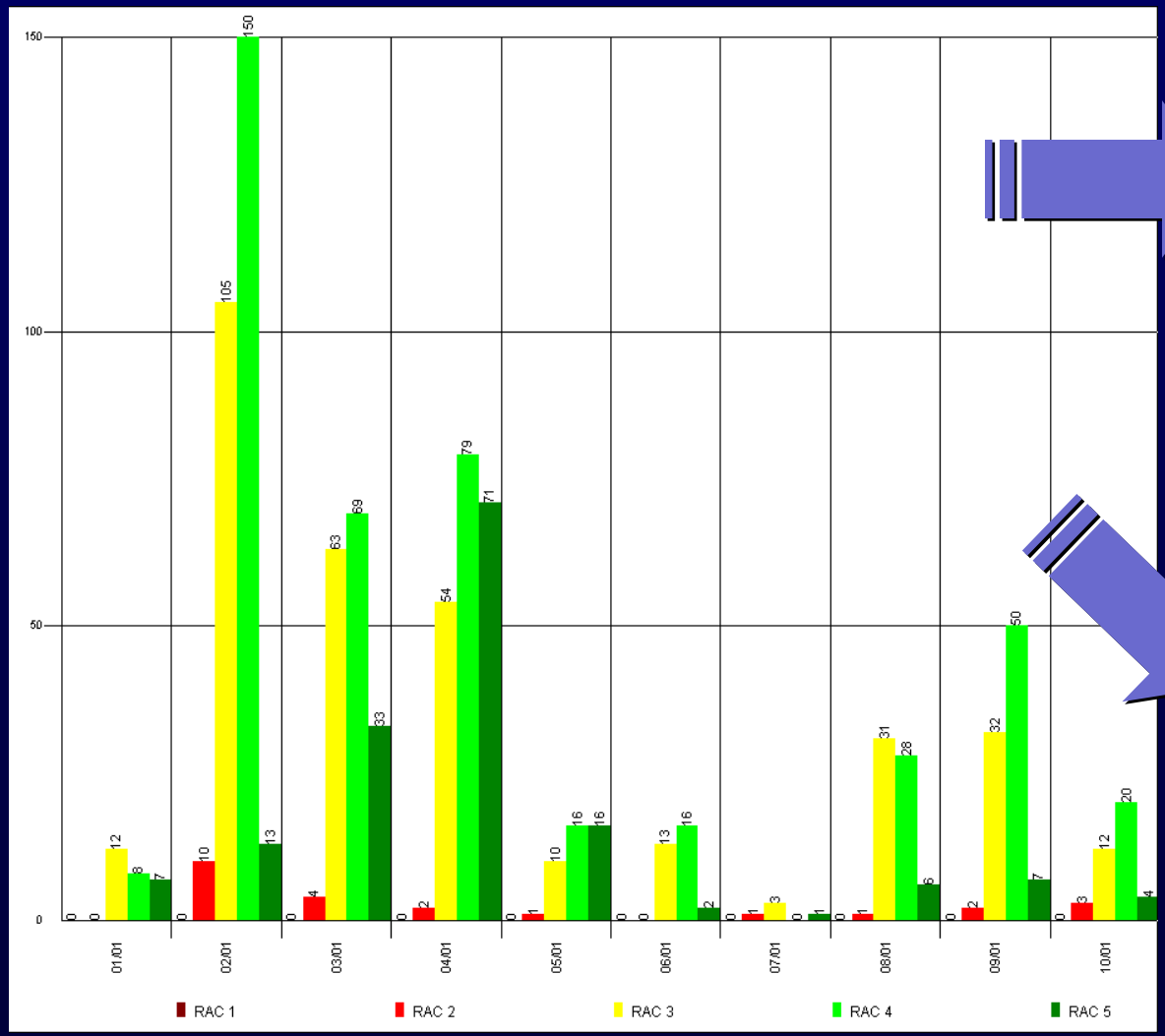
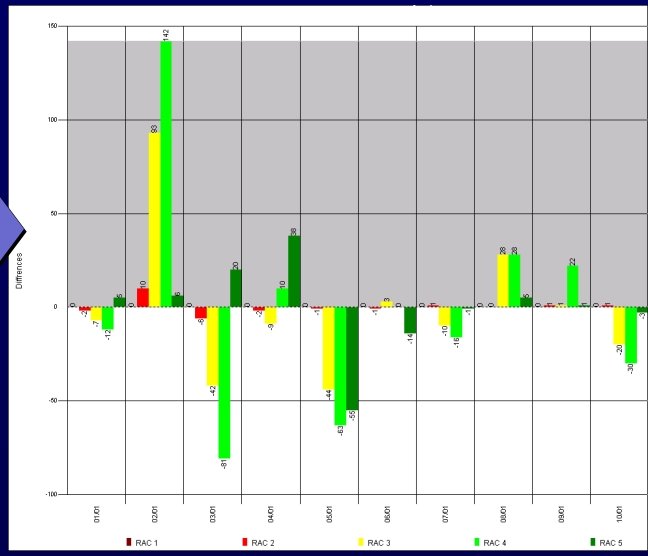
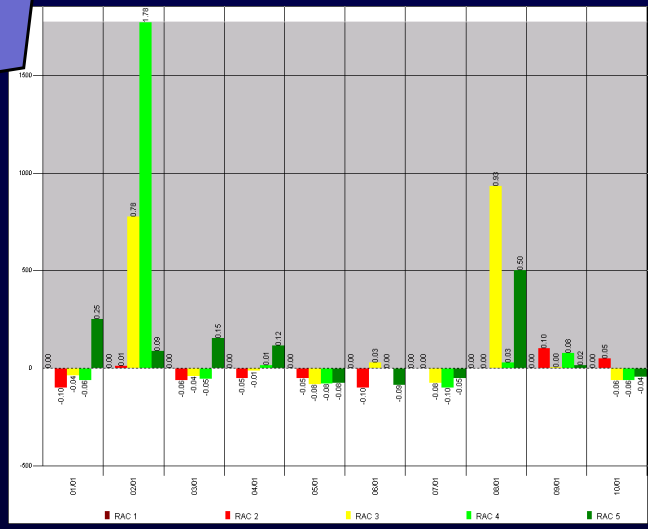


Interactive RAC Trend Analysis



Differences



% Change

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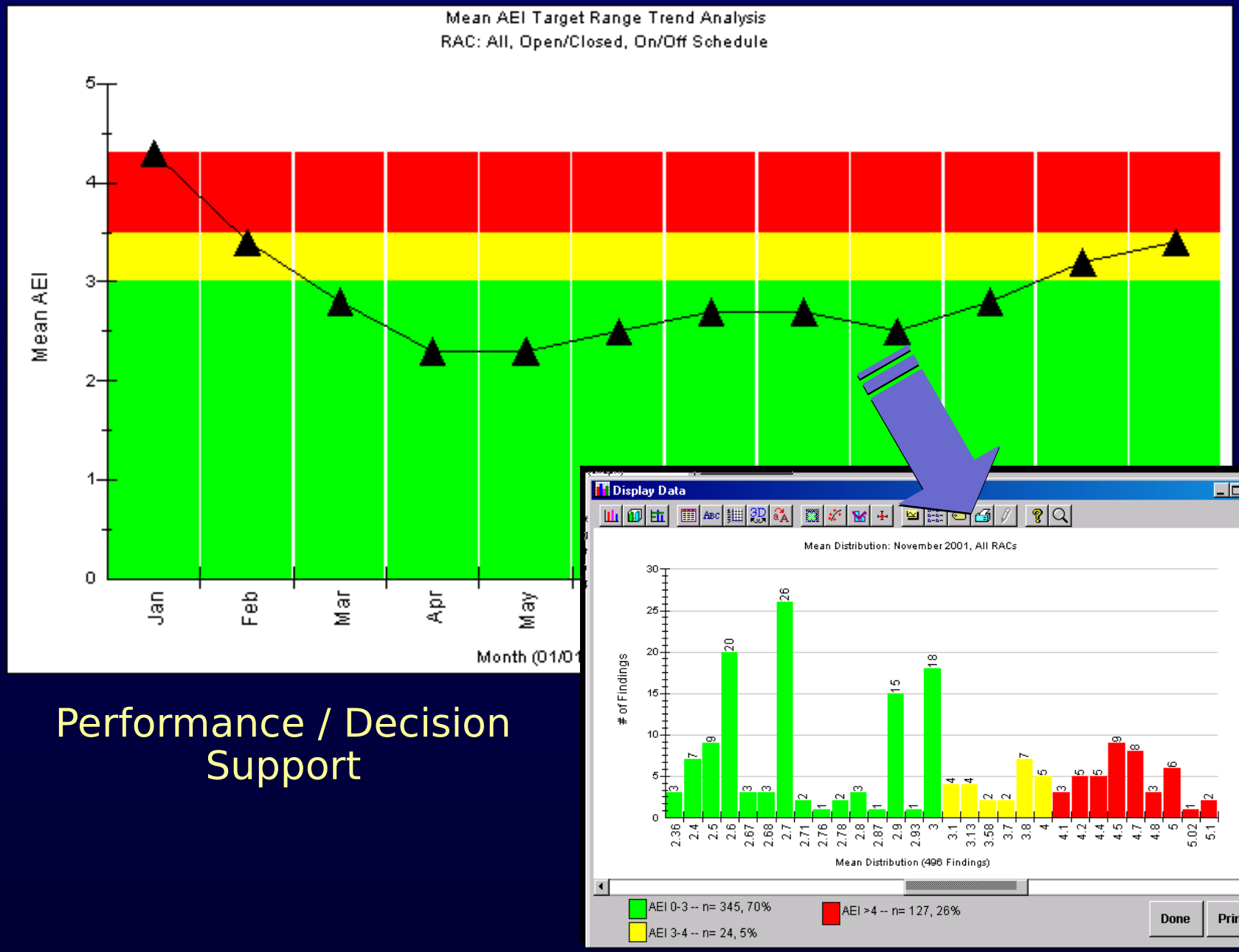

Performance / Decision Support

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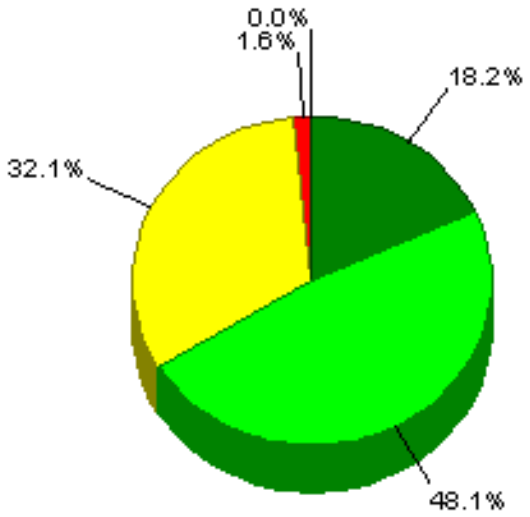
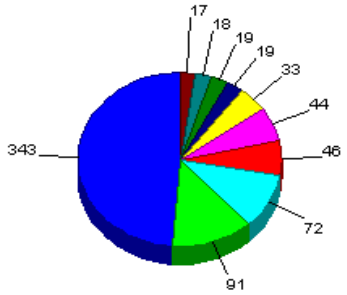
Proportion of Findings by Risk Assessment Code



Total Findings 374

RAC 1 (0) RAC 2 (6) RAC 3 (120) RAC 4 (180) RAC5 (68)

Top 10 Organizations With the Highest Number of Findings



XDW22
CD25
G61
G63
XDW62
G30
XDC8
G51
XDW61
K60

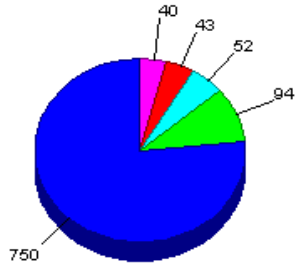
Total Findings: 702 (05/09/2002)

Top 10 Locations With Highest Number of Inspection Findings

198
194
199
152
183
150
197
182
105
423

Total Findings: 291 (05/09/2002)

Top 5 Inspection Types Yielding the Highest Number of Findings



Annual Inspection
Random Safety Inspection
Annual
Zone Inspection
High Hazard Inspection

Total Findings: 979 (05/09/2002)

Top 5 Most Prevalent Specific Findings Cited

29 CFR 1910 .36(b)(6)
29 CFR 1910 .305(b)(1)
29 CFR 1910 .303(b)(1)
29 CFR 1910 .305(b)(2)
29 CFR 1910 .37(q)(1)

Total Findings: 305 (05/09/2002)

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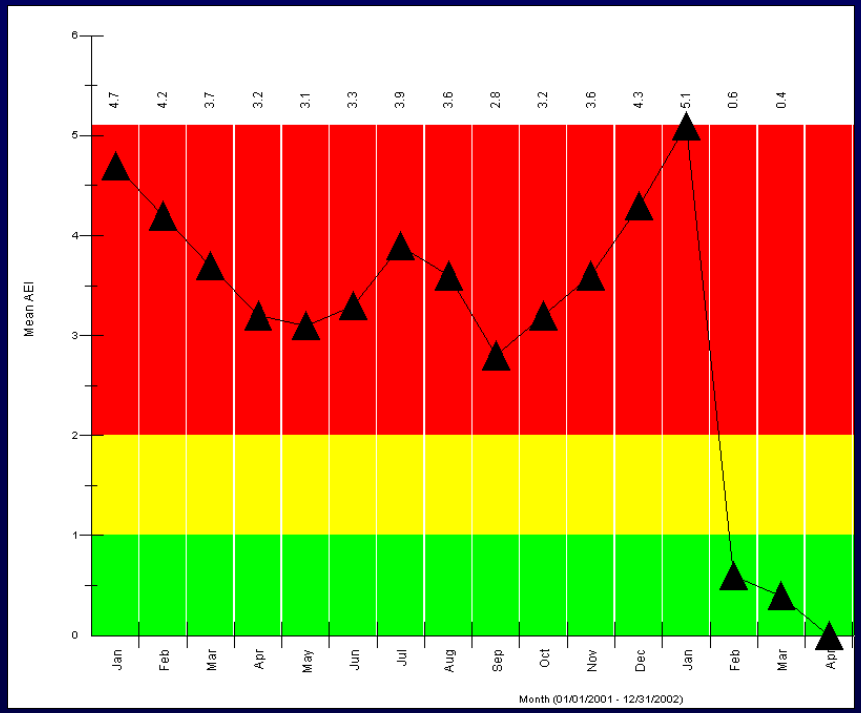

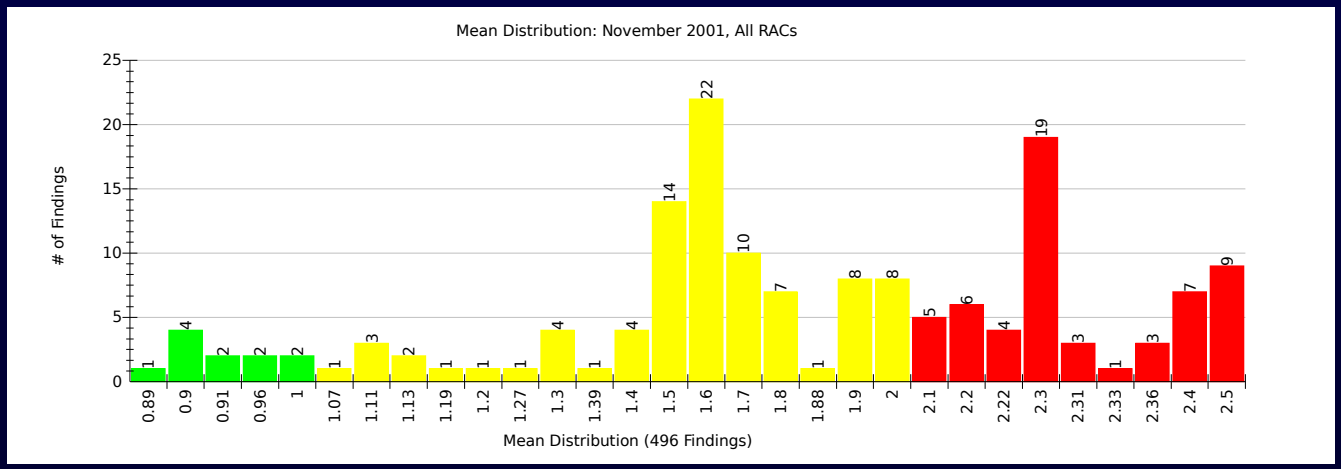

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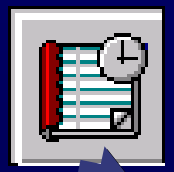
Continuous Improvement

4/10/02



1 New

2 Location

4/15/02

3 Finding

4 Risk

4 Risk

New Inspection

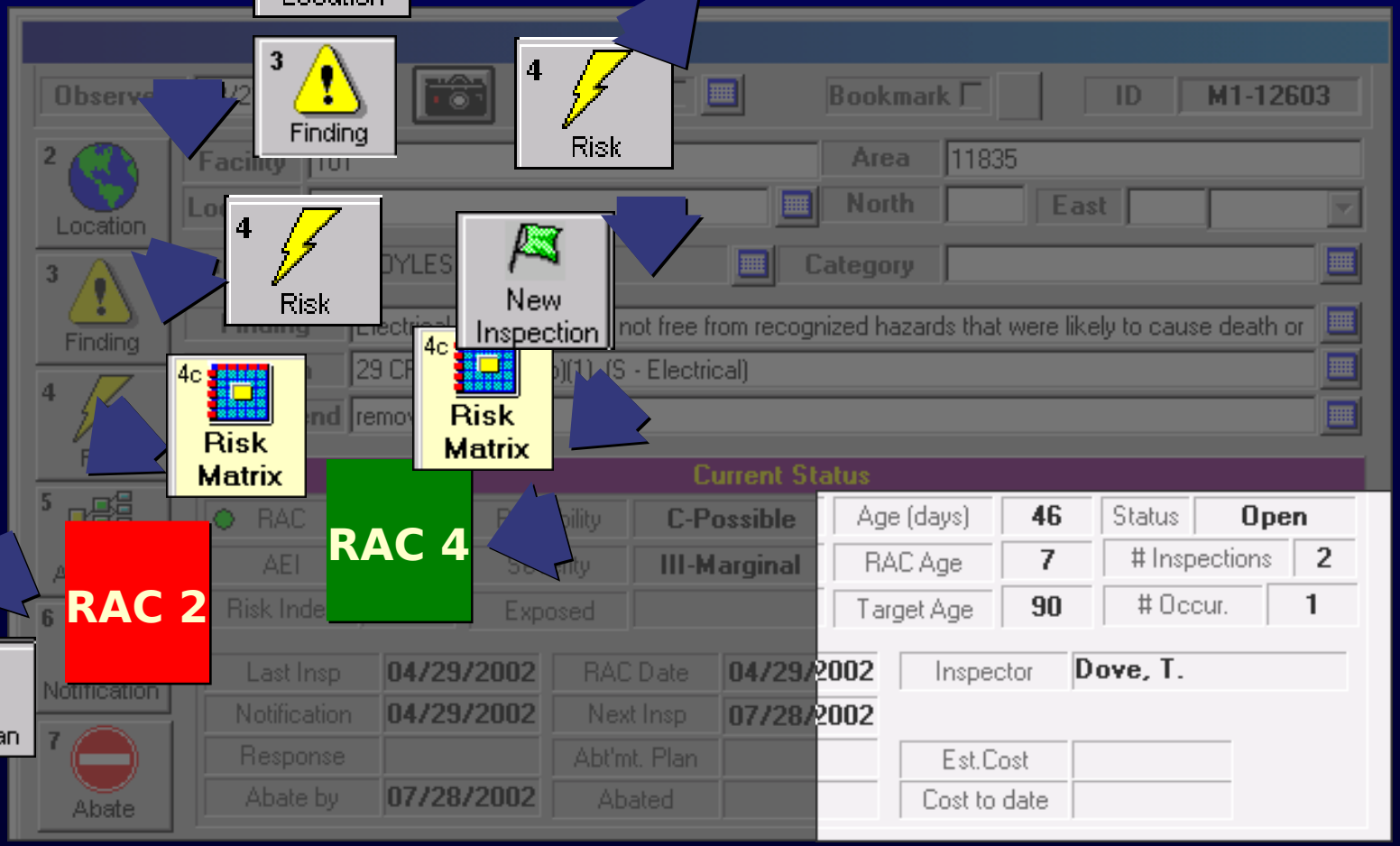
4c Risk Matrix

4c Risk Matrix

RAC 4

RAC 2

5 Abt. Plan



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1. **Assign RAC** (initial or interim action)
2. **Abatement Date Calculated** (automatically)
3. **AEI Calculated** (automatically):

$$AEI = \frac{\text{Finding Status Age}}{\text{Target Age}}$$

$\frac{15}{30} = 0.5$ $\frac{21}{30} = 0.7$ $\frac{30}{30} = 1.0$ $\frac{60}{30} = 2.0$

Current Status

RAC	3	Probability	B-Probable	Age (days)	53	Status	Open
AEI	1.18	Severity	III-Marginal	RAC Age	53	# Inspections	1
Risk Index		Exposed		Target Age	45	# Occur.	1

Last Insp	03/14/2002	RAC Date	03/14/2002	Inspector	Jones, C. T.
Notification		Next Insp	04/28/2002		
Response	05/02/2002	Abt'mt. Plan		Est.Cost	0
Abate by	04/28/2002	Abated		Cost to date	

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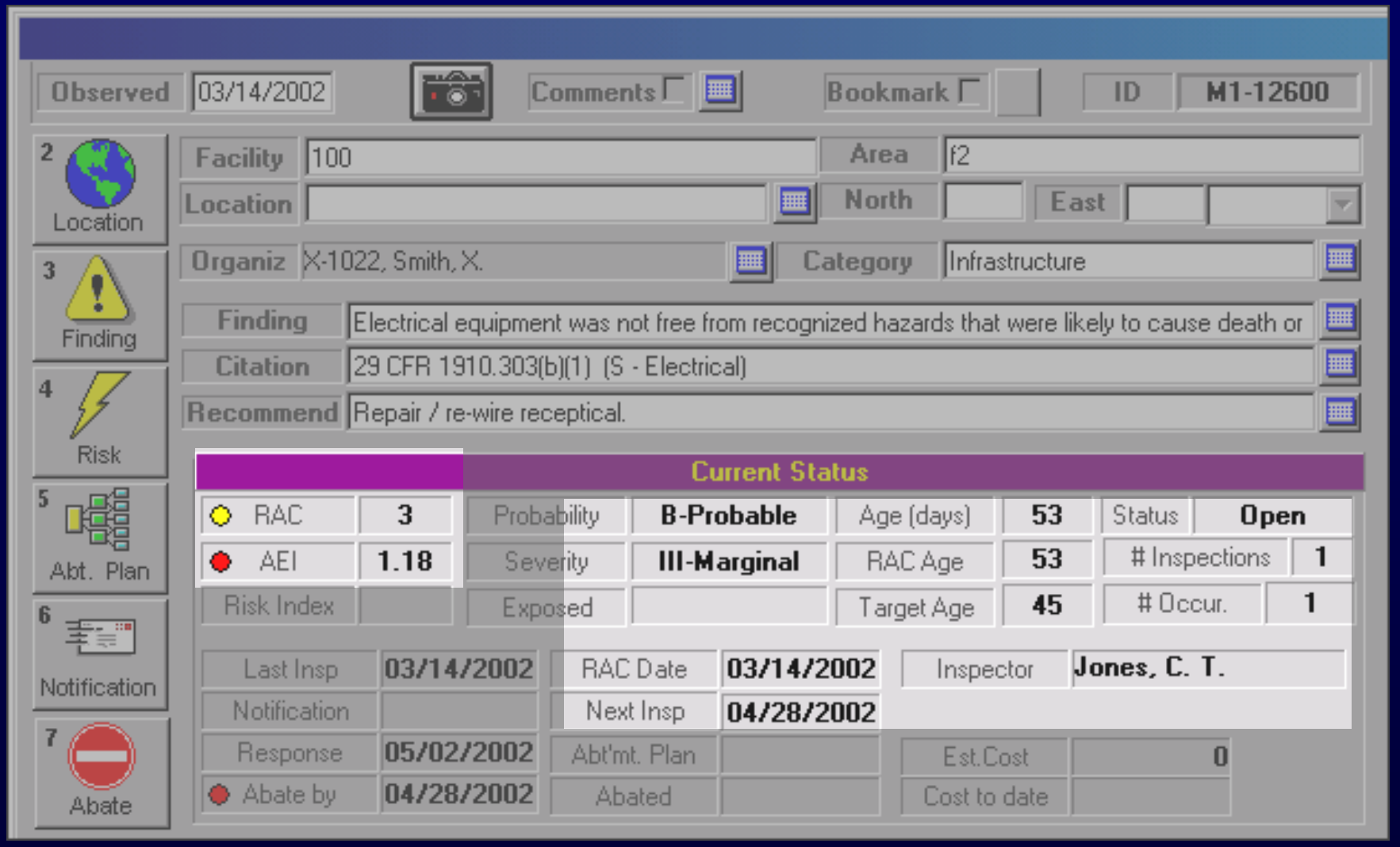

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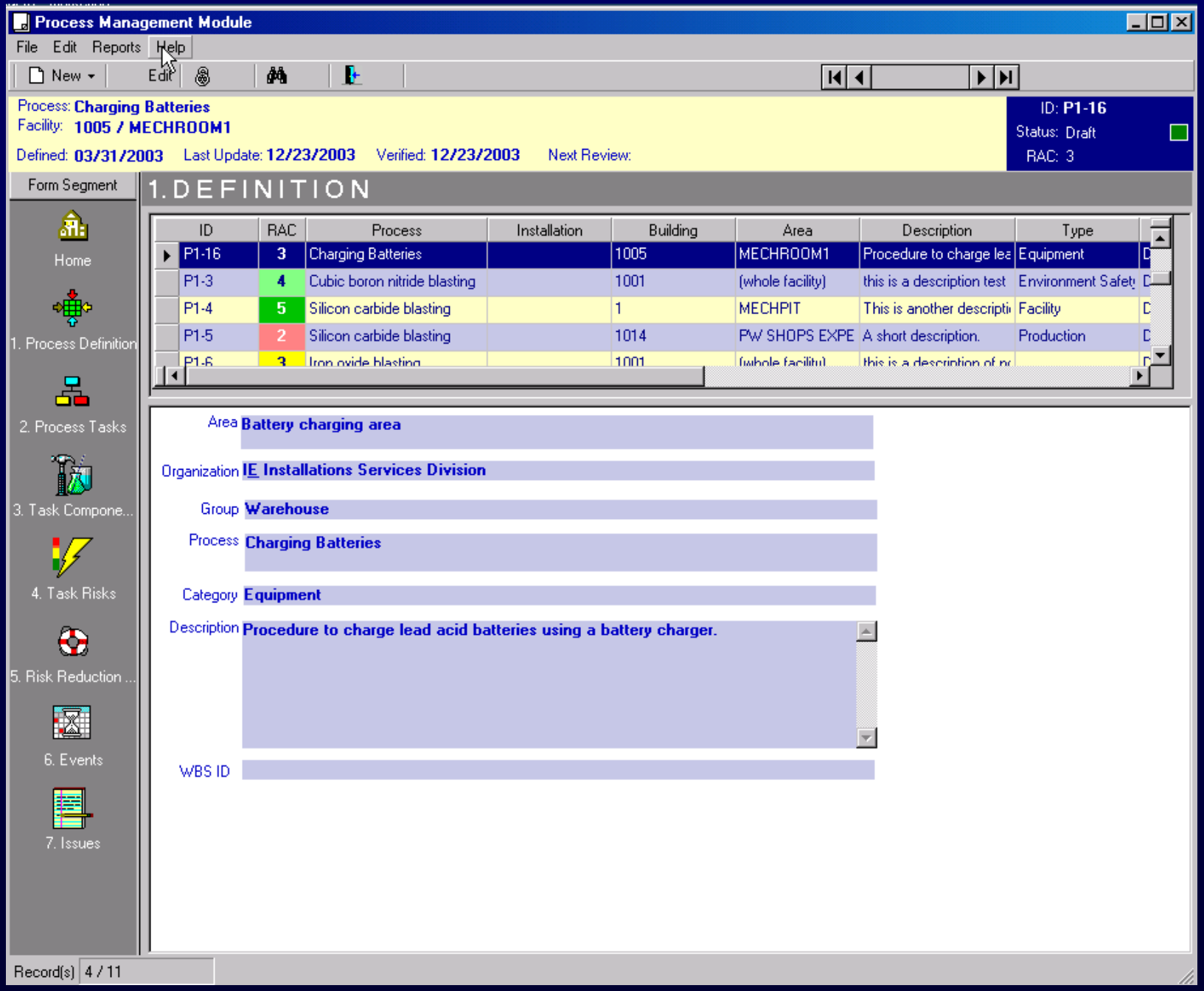
Process Risk


Process Management Module
File Edit Reports Help
New Edit
Process: Charging Batteries
Facility: 1005 / MECHROOM1
Defined: 03/31/2003 Last Update: 12/23/2003 Verified: 12/23/2003 Next Review:
ID: P1-16
Status: Draft
RAC: 3
Form Segment
1. DEFINITION
Home
1. Process Definition
2. Process Tasks
3. Task Compone...
4. Task Risks
5. Risk Reduction ...
6. Events
7. Issues
ID RAC Process Installation Building Area Description Type
P1-16 3 Charging Batteries 1005 MECHROOM1 Procedure to charge lea Equipment
P1-3 4 Cubic boron nitride blasting 1001 (whole facility) this is a description test Environment Safety
P1-4 5 Silicon carbide blasting 1 MECHPIT This is another descripti Facility
P1-5 2 Silicon carbide blasting 1014 PW SHOPS EXPE A short description. Production
P1-6 3 Iron oxide blasting 1001 (whole facility) this is a description of pr
Area Battery charging area
Organization IE Installations Services Division
Group Warehouse
Process Charging Batteries
Category Equipment
Description Procedure to charge lead acid batteries using a battery charger.
WBS ID
Record(s) 4 / 11

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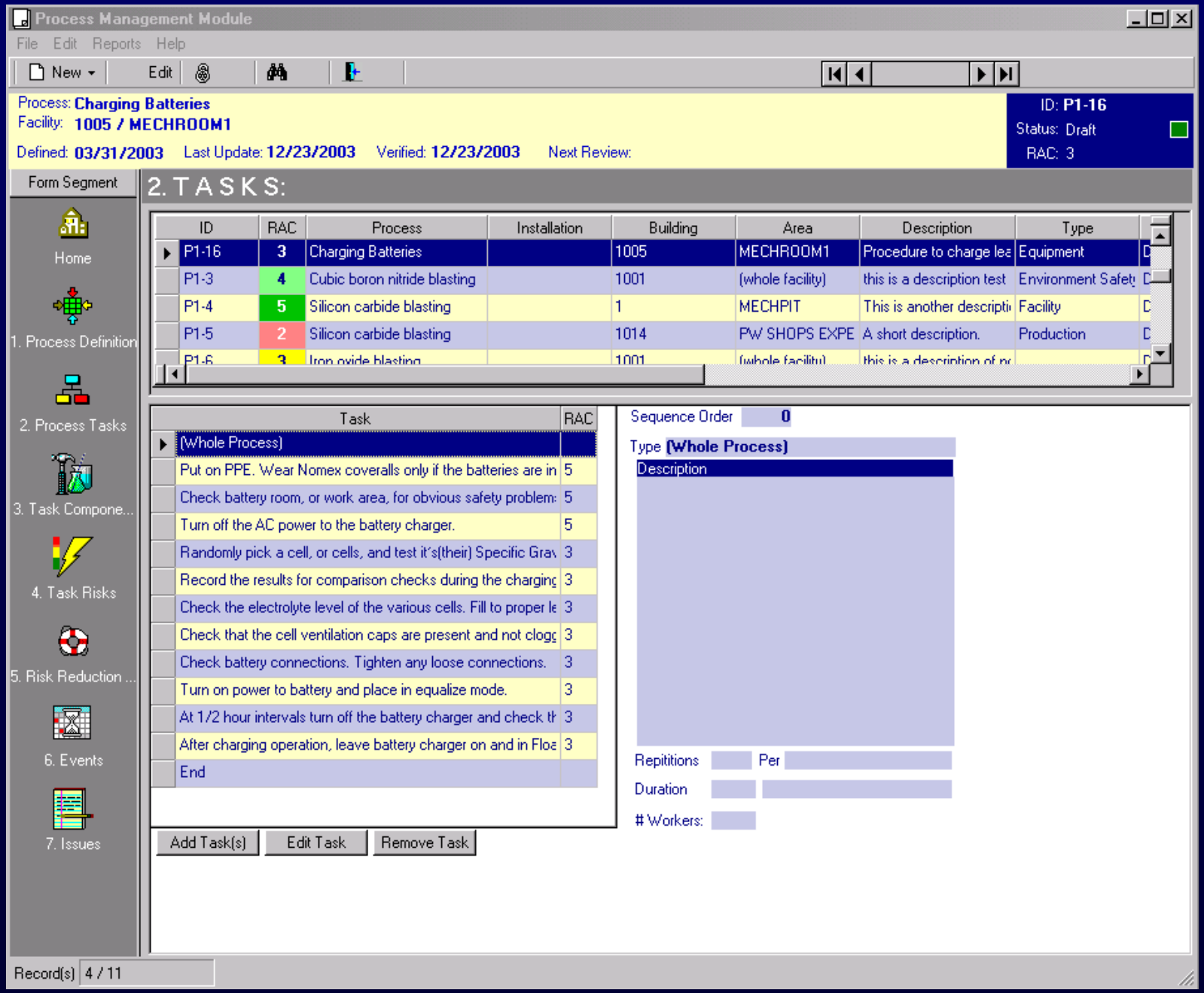
Process Management Module
File Edit Reports Help
New Edit
Process: Charging Batteries
Facility: 1005 / MECHROOM1
Defined: 03/31/2003 Last Update: 12/23/2003 Verified: 12/23/2003 Next Review:
ID: P1-16
Status: Draft
RAC: 3
Form Segment
2. TASKS:
Home
1. Process Definition
2. Process Tasks
3. Task Compone...
4. Task Risks
5. Risk Reduction ...
6. Events
7. Issues
ID RAC Process Installation Building Area Description Type
P1-16 3 Charging Batteries 1005 MECHROOM1 Procedure to charge lea Equipment
P1-3 4 Cubic boron nitride blasting 1001 (whole facility) this is a description test Environment Safety
P1-4 5 Silicon carbide blasting 1 MECHPIT This is another descripti Facility
P1-5 2 Silicon carbide blasting 1014 PW SHOPS EXPE A short description. Production
Task RAC
(Whole Process)
Put on PPE. Wear Nomex coveralls only if the batteries are in 5
Check battery room, or work area, for obvious safety problem: 5
Turn off the AC power to the battery charger. 5
Randomly pick a cell, or cells, and test it's(their) Specific Grav 3
Record the results for comparison checks during the charging 3
Check the electrolyte level of the various cells. Fill to proper le 3
Check that the cell ventilation caps are present and not clogg 3
Check battery connections. Tighten any loose connections. 3
Turn on power to battery and place in equalize mode. 3
At 1/2 hour intervals turn off the battery charger and check th 3
After charging operation, leave battery charger on and in Floa 3
End
Sequence Order 0
Type (Whole Process)
Description
Repititions Per
Duration
Workers:
Add Task(s) Edit Task Remove Task
Record(s) 4 / 11

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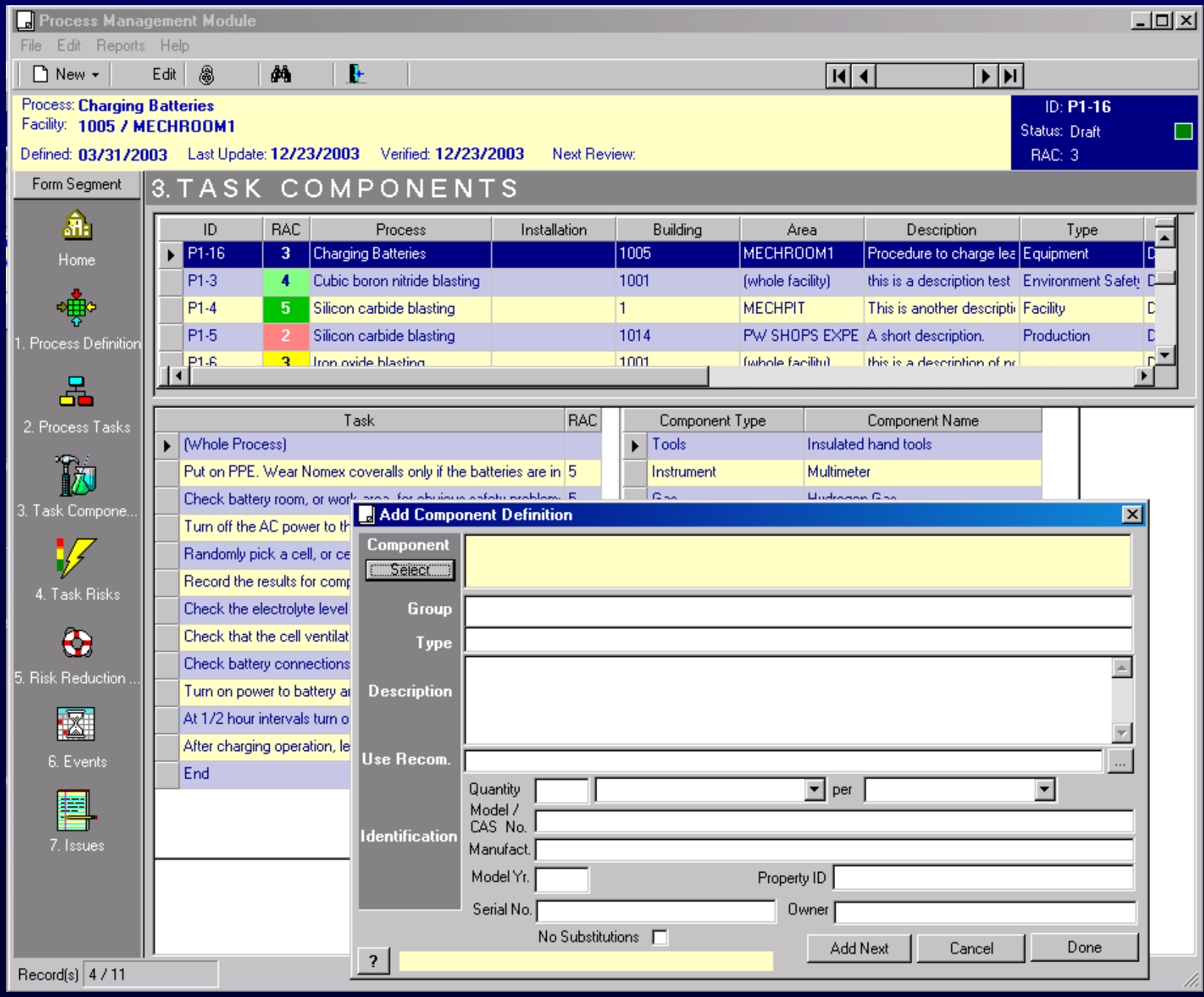

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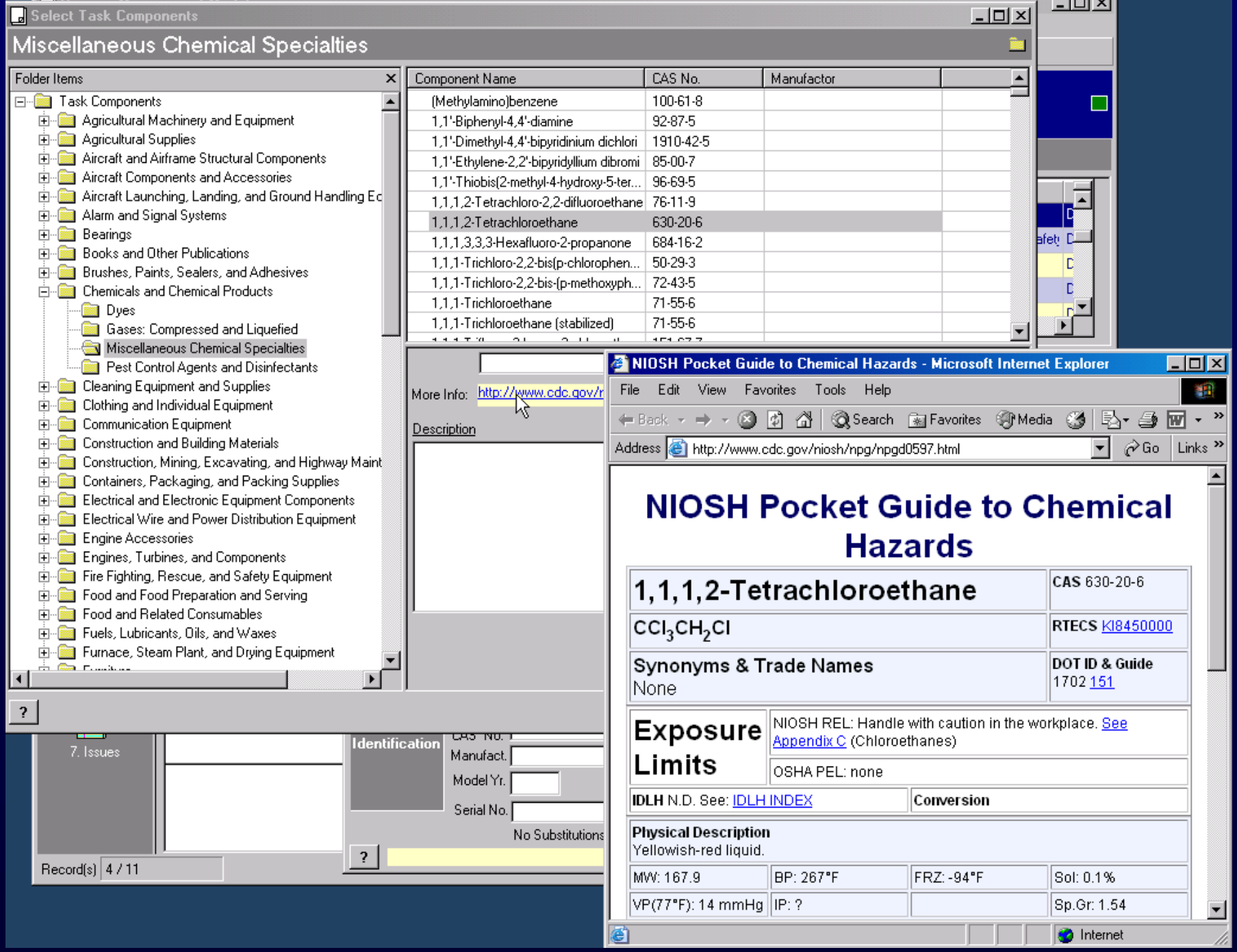

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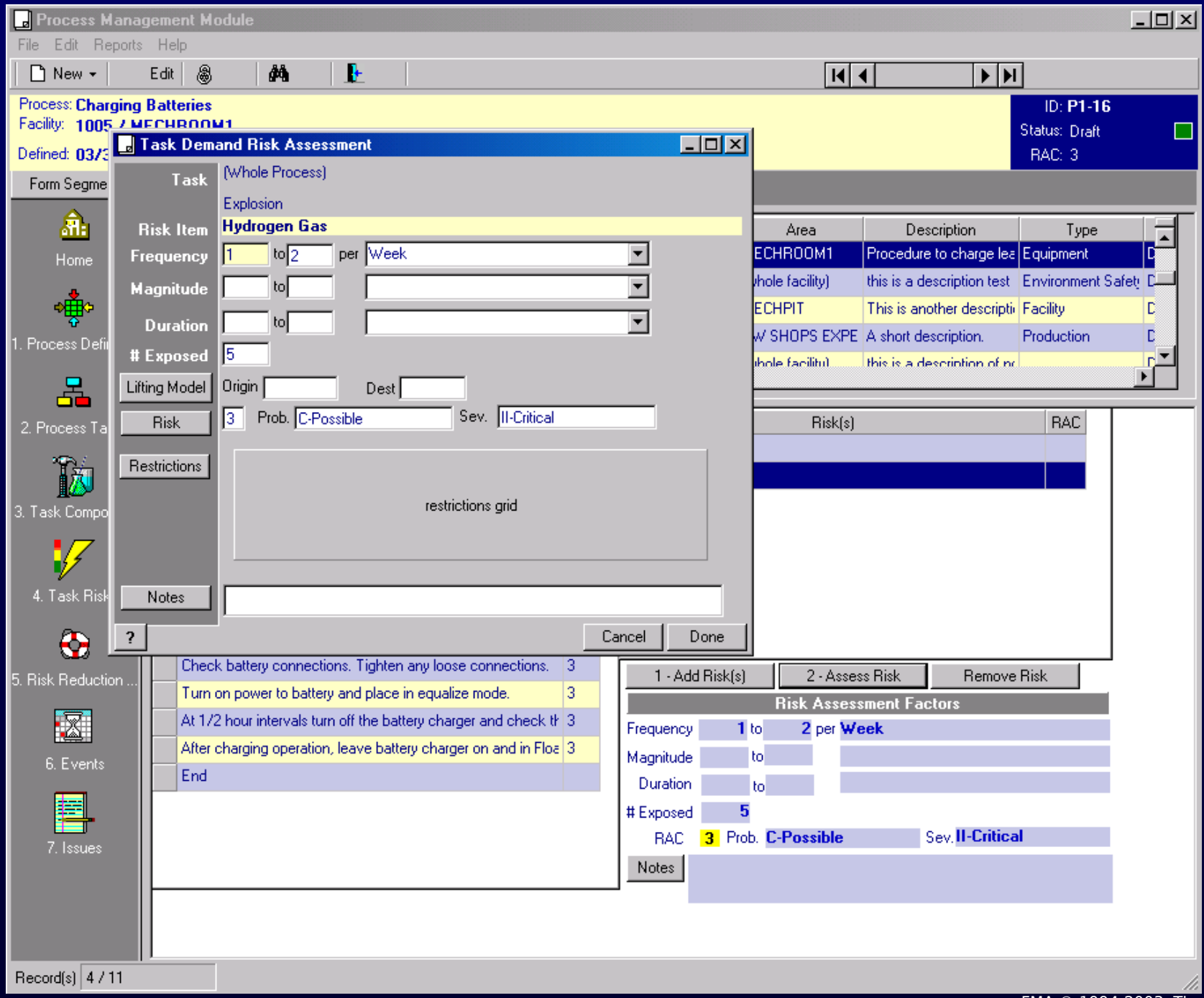

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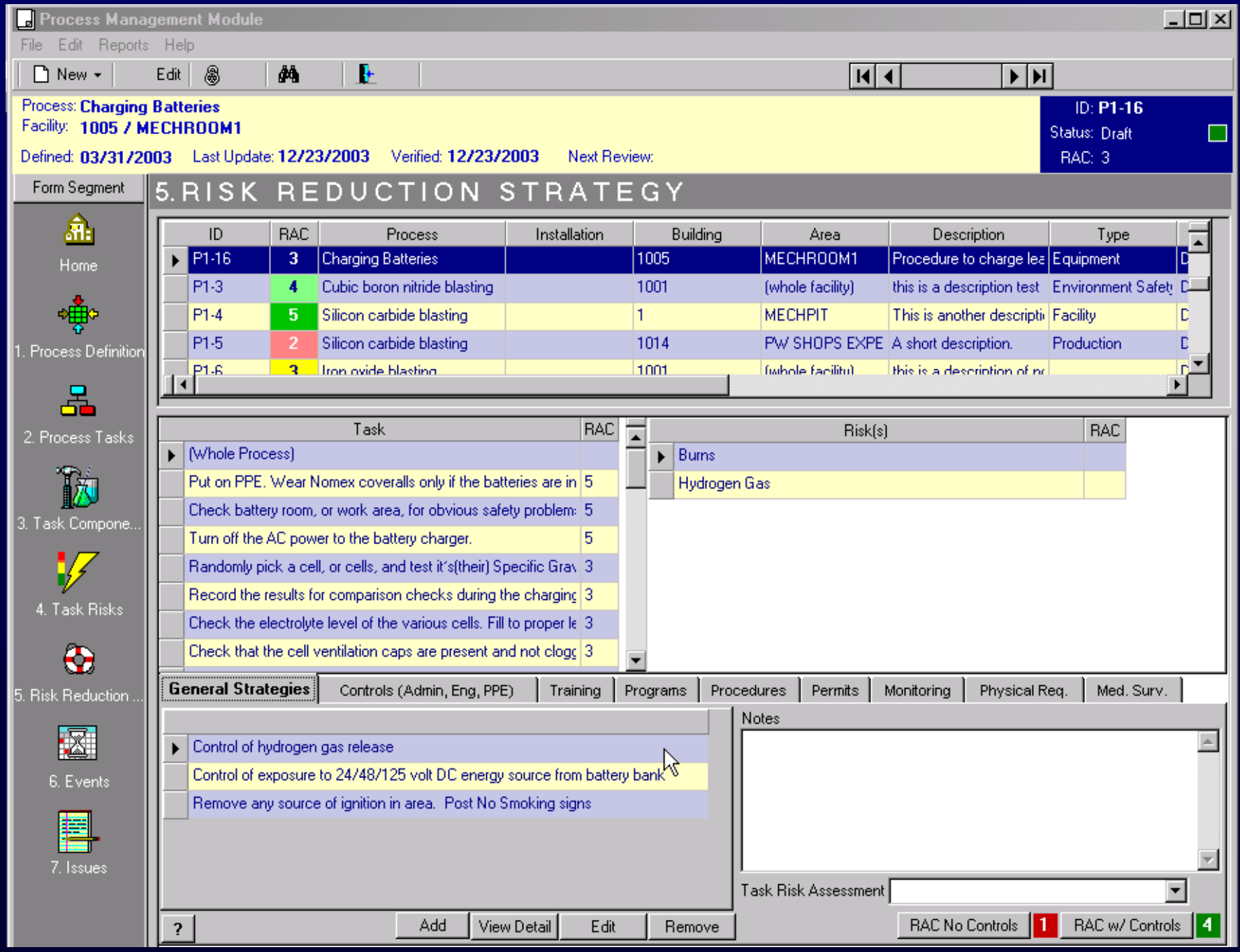
Process Management Module
File Edit Reports Help
New Edit
Process: Charging Batteries
Facility: 1005 / MECHROOM1
Defined: 03/31/2003 Last Update: 12/23/2003 Verified: 12/23/2003 Next Review:
ID: P1-16
Status: Draft
RAC: 3
Form Segment
5. RISK REDUCTION STRATEGY
Home
1. Process Definition
2. Process Tasks
3. Task Compone...
4. Task Risks
5. Risk Reduction ...
6. Events
7. Issues
ID RAC Process Installation Building Area Description Type
P1-16 3 Charging Batteries 1005 MECHROOM1 Procedure to charge lea Equipment
P1-3 4 Cubic boron nitride blasting 1001 (whole facility) this is a description test Environment Safety
P1-4 5 Silicon carbide blasting 1 MECHPIT This is another descripti Facility
P1-5 2 Silicon carbide blasting 1014 PW SHOPS EXPE A short description. Production
Task RAC
(Whole Process)
Put on PPE. Wear Nomex coveralls only if the batteries are in 5
Check battery room, or work area, for obvious safety problem: 5
Turn off the AC power to the battery charger. 5
Randomly pick a cell, or cells, and test it's(their) Specific Grav 3
Record the results for comparison checks during the charging 3
Check the electrolyte level of the various cells. Fill to proper le 3
Check that the cell ventilation caps are present and not clogg 3
Risk(s) RAC
Burns
Hydrogen Gas
General Strategies
Controls (Admin, Eng, PPE)
Training
Programs
Procedures
Permits
Monitoring
Physical Req.
Med. Surv.
Control of hydrogen gas release
Control of exposure to 24/48/125 volt DC energy source from battery bank
Remove any source of ignition in area. Post No Smoking signs
Notes
Task Risk Assessment
?
Add
View Detail
Edit
Remove
RAC No Controls 1
RAC w/ Controls 4

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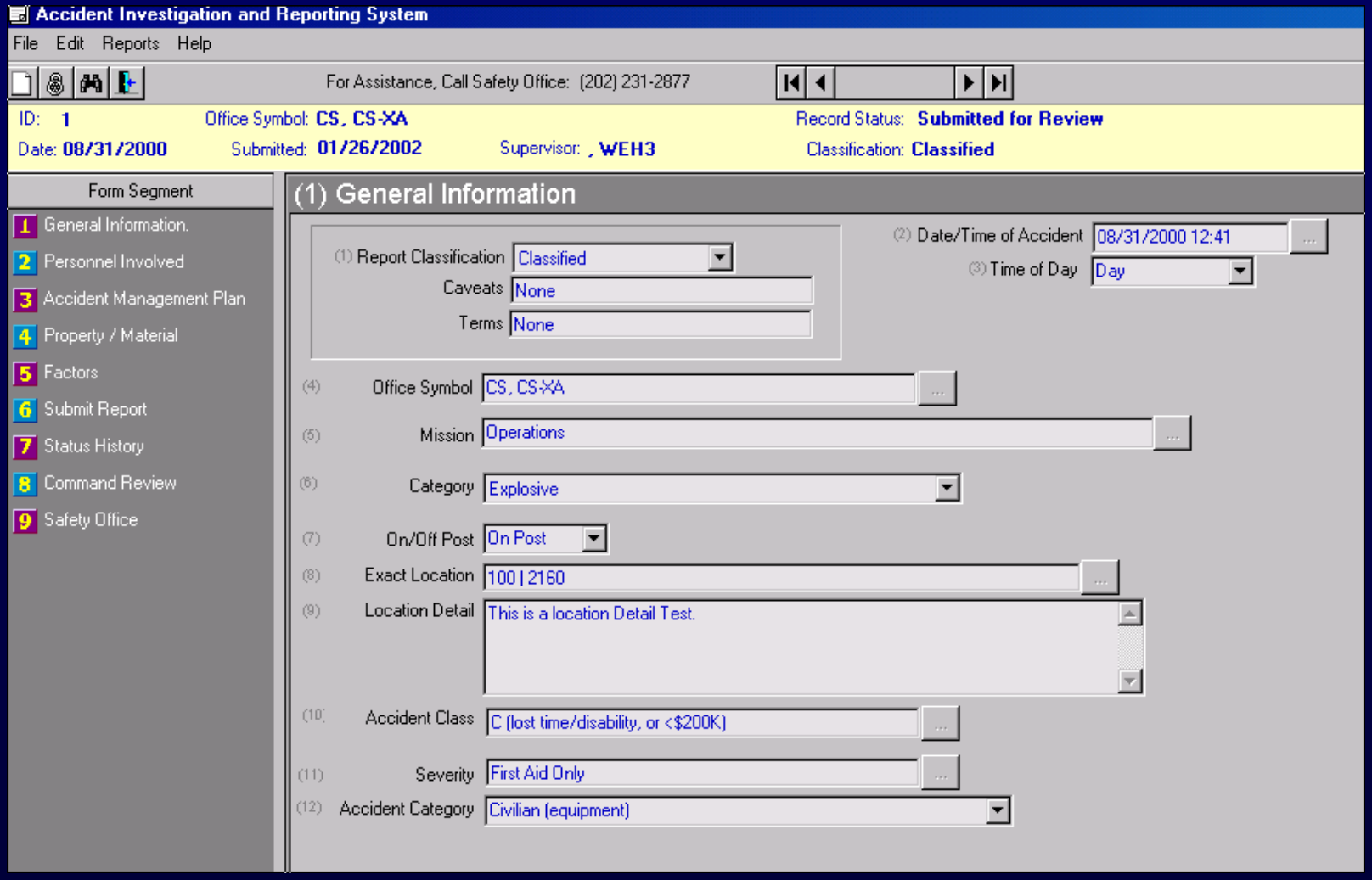
Incidents



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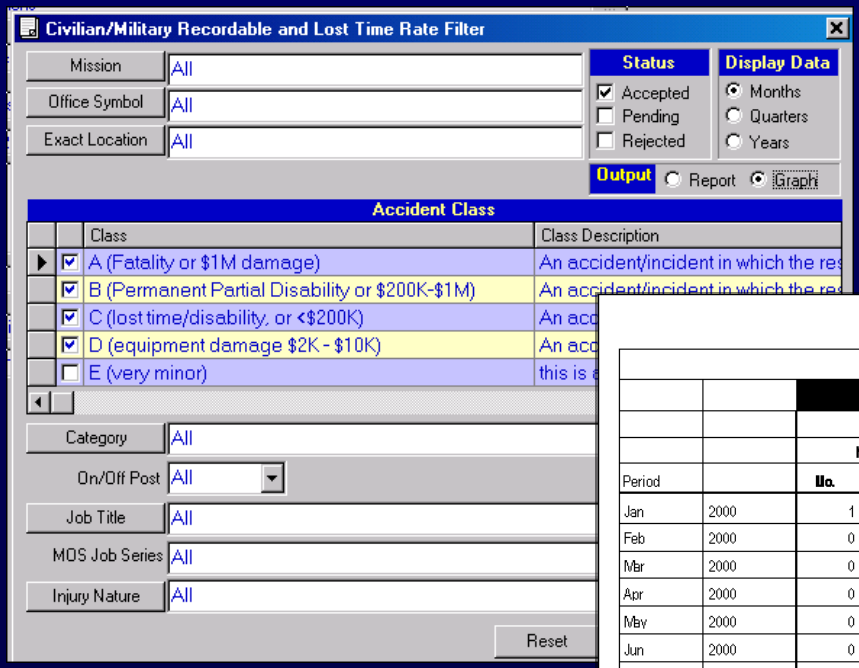
Analyses

Filters

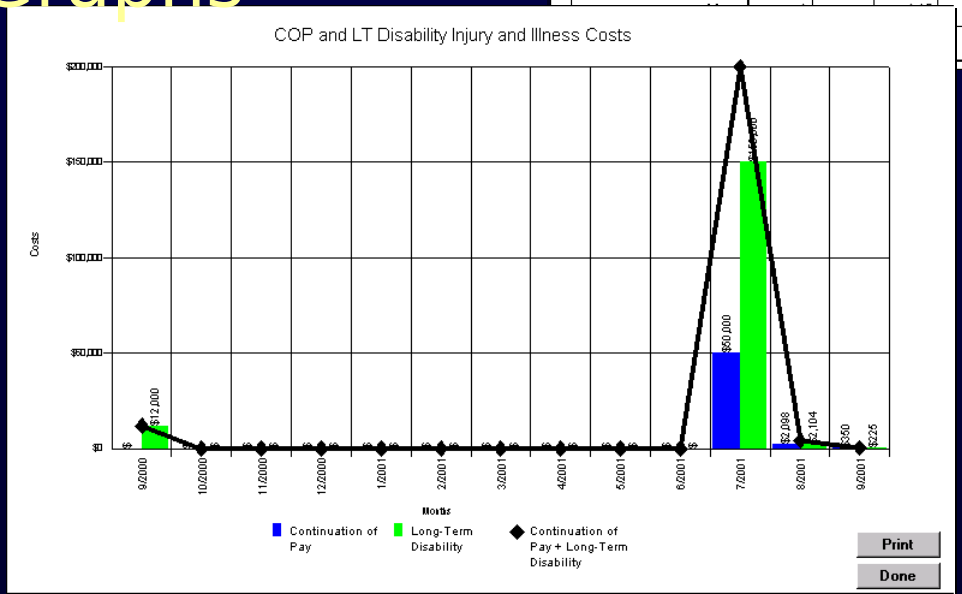


Reports

Recordable And Lost Time Incident Frequer

		Civilian								Military			
		Recordable				Lost Time				Recordable			
		Number		Rates[1]		Number		Rates		Number		Rates	
Period		No.	Yr.	No.	Yr.[2]	No.	Yr.	No.	Yr.	No.	Yr.	No.	Yr.
Jan	2000	1	1	0.43	0.09	1	1	0.43	0.09	0	0	0.00	0.00
Feb	2000	0	1	0.00	0.05	0	1	0.00	0.05	0	0	0.00	0.00
Mar	2000	0	1	0.00	0.05	0	1	0.00	0.05	0	0	0.00	0.00
Apr	2000	0	1	0.00	0.06	0	1	0.00	0.06	0	0	0.00	0.00
May	2000	0	1	0.00	0.06	0	1	0.00	0.06	0	0	0.00	0.00
Jun	2000	0	1	0.00	0.06	0	1	0.00	0.06	0	0	0.00	0.00
Jul	2000	0	1	0.00	0.07	0	1	0.00	0.07	0	0	0.00	0.00
Aug	2000	0	1	0.00	0.07	0	1	0.00	0.07	1	1	0.03	0.02
	Total	1				1				1			
	Ave	1.0		0.05		0.1		0.05		1.0		0.00	
	Max	1		0.43		1		0.43		1		0.03	
						0		0.00		0		0.00	
						0.33		0.14		0.33		0.01	

Graphs



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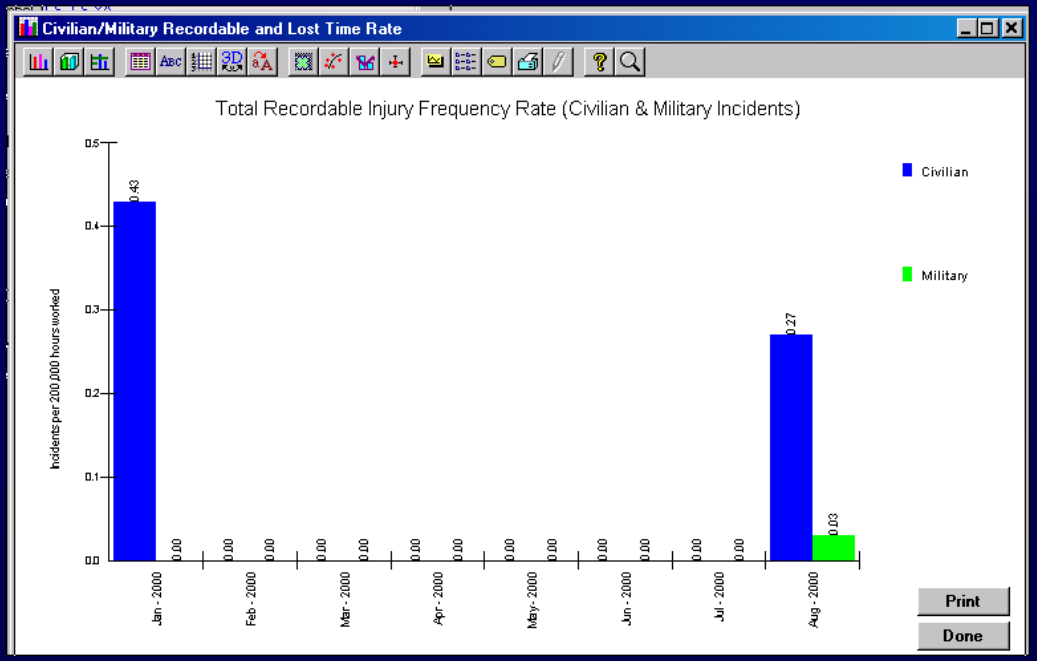
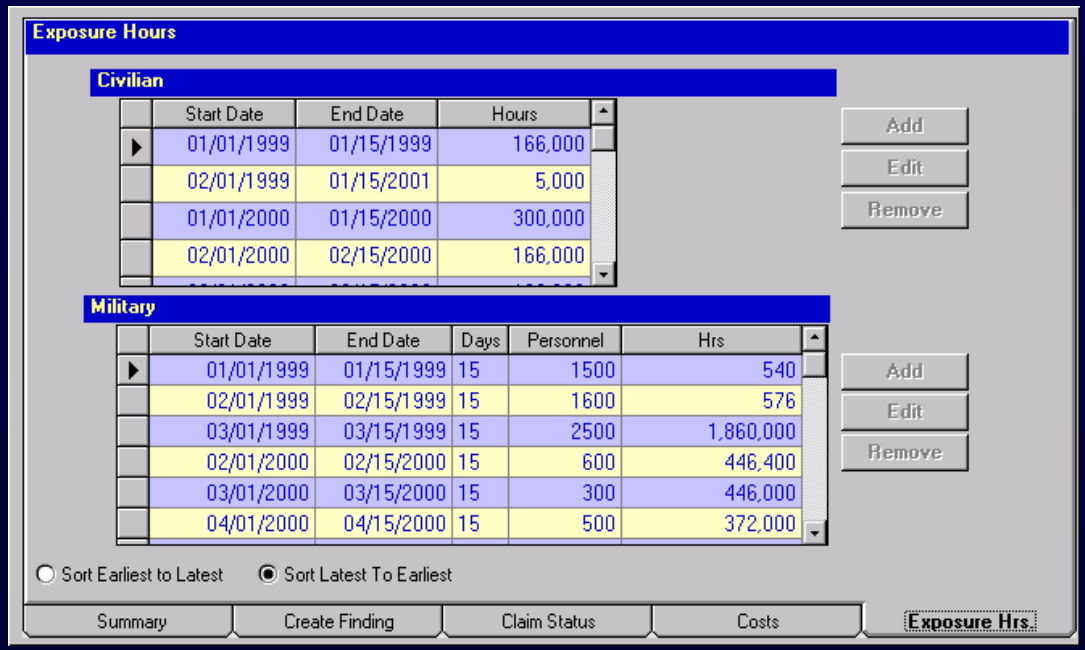
Analyses

Civilian / Military Rates





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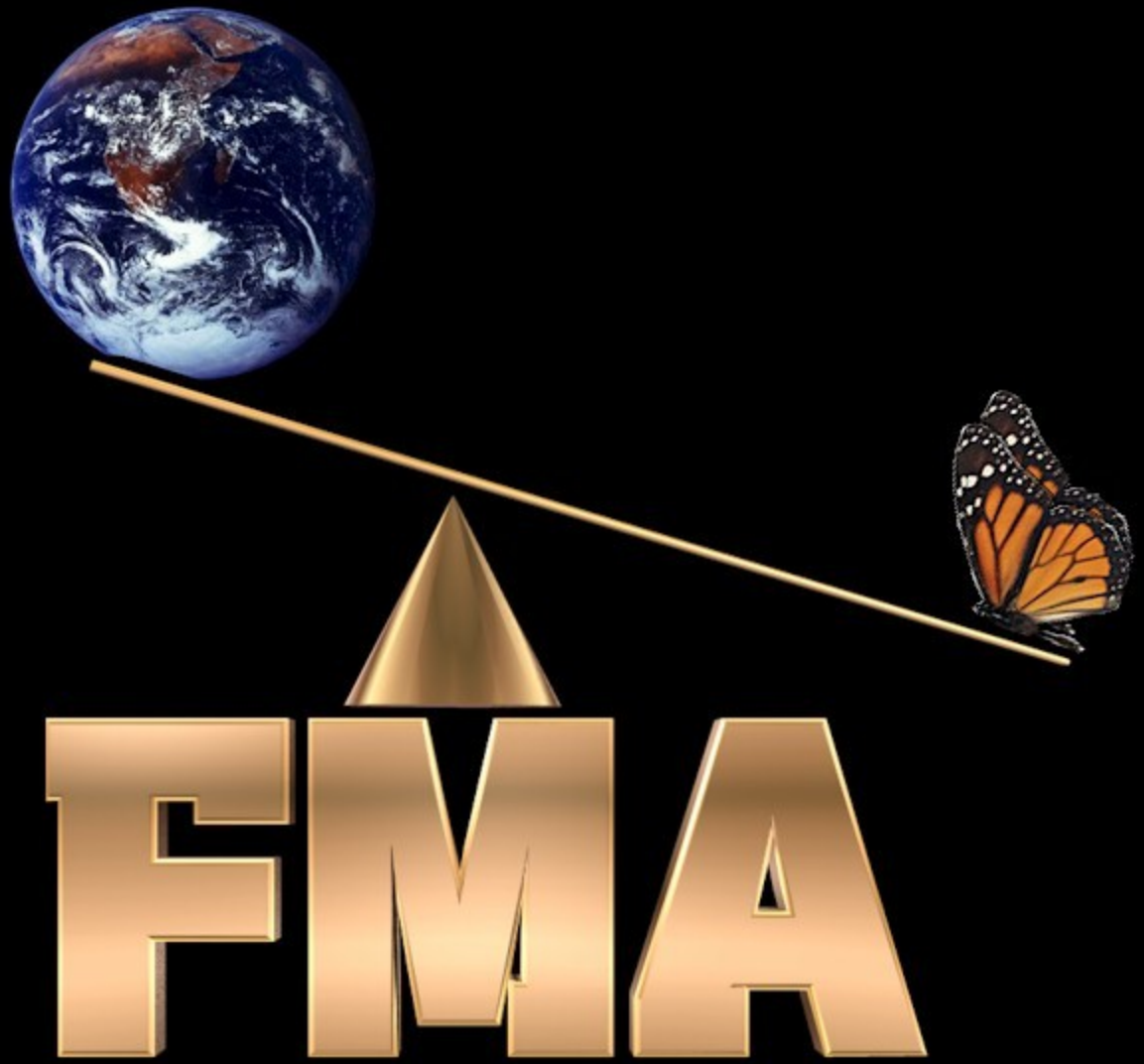
Thank You!



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